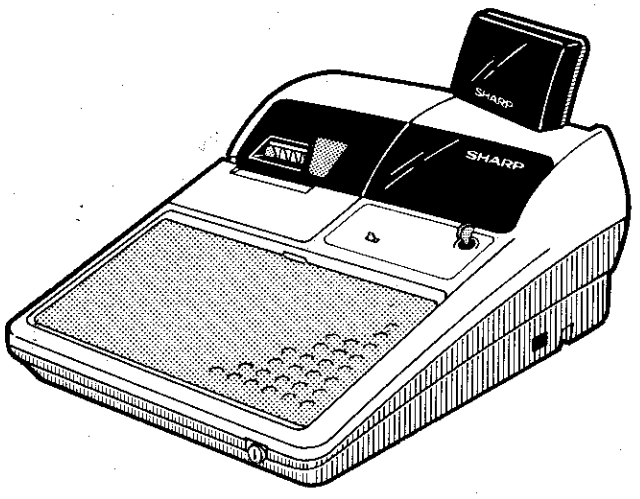
SHARP SERVICE MANUAL

CODE: 00ZERA650VSME



ELECTRONIC CASH REGISTER

MODEL ER-A650

SRV Key : LKGIM7113RCZZ
PRINTER: M-820
(For "V" version)

CAUTION
EXTREME CAUTION MUST BE TAKEN WHEN SERVICING THIS MACHINE. EVEN THOUGH THE MODE SWITCH IS IN THE ⏻ POSITION, VOLTAGE IS STILL SUPPLIED TO THE ENTIRE MACHINE.
WHEN WORKING ON THIS MACHINE MAKE SURE THAT THE POWER CORD IS REMOVED FROM THE WALL OUTLET.

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PARTS GUIDE

Parts marked with "⚠" is important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

SHARP CORPORATION

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CHAPTER 1. SPECIFICATIONS

1. Appearance/Rating

1) Appearance

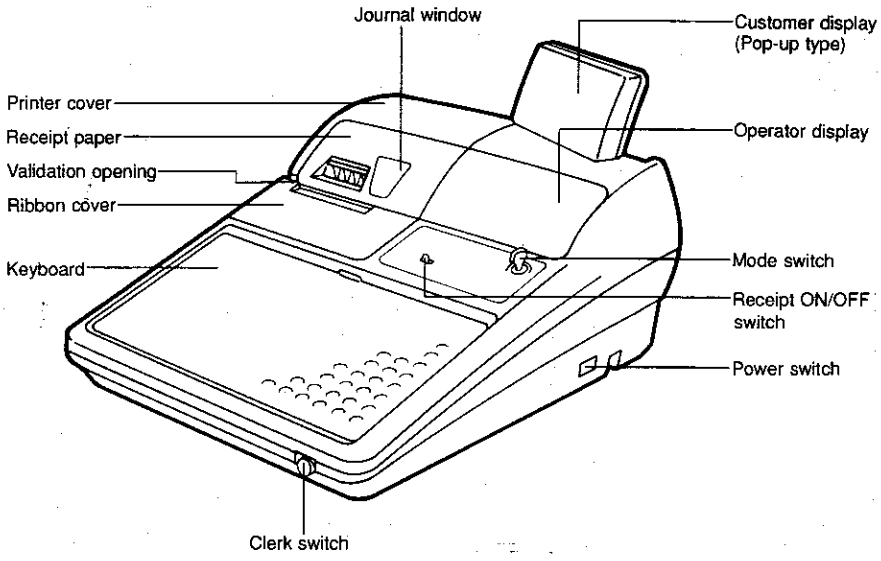


Fig. 1-1

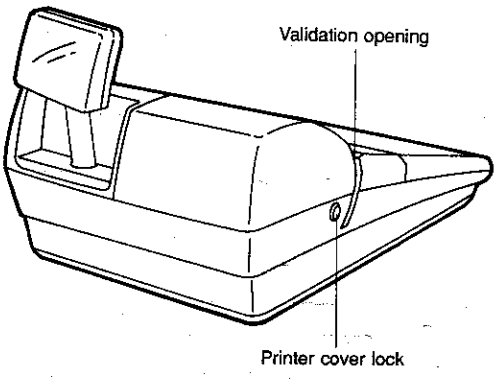


Fig. 1-2

2) Rating

Power source	AC local voltage (±10%) 50Hz/60Hz
Power consumption	Standby: 20 W Maximum: 68 W(Germany), 69 W(U.K), with options installed.
Operating temperature	0°C~40°C (32°F~104°F)
Operating humidity	10%~90% (RH)
Physical dimensions, including the drawer	374(W) × 483(D) × 215(H)mm
Weight	8.5 kg

2. Keyboard

1) Standard keyboard layout

↑ RECEIPT	↑ JOURNAL	TEXT #	TEXT 1	TEXT 2	TEXT 3	TEXT 4	PRICE LEVEL 3	10	20	30	40	50	60	70	80
RCPT	GC RCPT	16	17	18	19	20	PRICE LEVEL 2	9	19	29	39	49	59	69	79
SLIP	VP	11	12	13	14	15	PRICE LEVEL 1	8	18	28	38	48	58	68	78
RCPT SHIFT	GC COPY	6	7	8	9	10	#	7	17	27	37	47	57	67	77
GUEST #	AUTO	1	2	3	4	5	WITH OUT	6	16	26	36	46	56	66	76
VAT SHIFT	VAT	⊗	•	CL	DEPO (+)	NC	WITH	5	15	25	35	45	55	65	75
%1	%2	7	8	9	DEPO (−)	GLU	CR2	4	14	24	34	44	54	64	74
⊖1	$2	4	5	6	AMT	NBAL	CR1	3	13	23	33	43	53	63	73
P0	RA	1	2	3	PLU/SUB	EX1	CH	2	12	22	32	42	52	62	72
RF	∞	0	00	000	NS	ST	TL	1	11	21	31	41	51	61	71

Fig. 2-1

2) Key top name

① Standard key top

Keytop	Description
0 to 9, 00, 000	Numeric keys
•	Decimal point key
C L	Clear key
⊗	Multiplication key
DEPT. 1~20	Department 1~20 keys
↑ RECEIPT	Receipt paper feed key
↑ JOURNAL	Journal paper feed key
RCPT	Receipt print key
VP	Validation print key
#	Non-add code entry key
AUTO	Atutomatically entry key
NS	No sale key
VAT	Value added tax key
SLIP	Slip print key
GC COPY	Guest check copy key
⊖ 1	Discount 1 key
⊖ 2	Discount 2 key
% 1	% 1 keys
% 2	% 2 keys
PO	Paid out key
RA	Received on account key
RF	Refund key
∞	Void key
AMT	Amount key
PLU/SUB	PLU/Subdept. code entry key
EX1	Currency Exchange 1 keys
PLU 1~80	Direct/Sub department 1~80 keys
NBAL	New balance key
ST	Tax included subtotal key
CR 1	Credit 1 key
CR 2	Credit 2 key
CH	Check key
TL	Total key
RCPT SHIFT	Receipt Shift key
GUEST #	Guest Number entry key
VAT SHIFT	VAT Shift key
TEXT #	Text Number Entry key
TEXT 1~4	Direct Text Entry keys
PRICE LEVEL 1~3	PLU Price Level keys
WITH OUT	With out key
WITH	With key
DEPO (+)	Deposit key
DEPO (–)	Deposit refund key
NC	New Check key
GLU	Guest Look Up key
GC RCPT	Guest check receipt issue key

② Option key top

Keytop	Description
DEPT. 21~99	Department 21~99 keys
PLU 81~158	Direct/Sab department 81~158 keys
⊖ 3, 4	Discount 3 and 4 keys
% 3, 4	%3 and 4 keys
CR3~8	Credit 3~8 keys
CA 2	Cash 2 key
EX 2~9	Currency Exchang 2~9 keys
AUTO 2 ~5	Automatically entry key 2~5
1/2	1/2 key
CLERK#	Clerk code entry key
CLERK 1~15	Clerk entry keys 1~15
TEXT 5~10	Free Text keys 5~10
FINAL	Tentative finalize key
HOTEL TRANS.	HOTEL transfer key
HALF PINT	Half pint key
VIP	VIP sale key
B. T.	Bill Totalizing key
TRANS OUT	Trans OUT key
TRANS IN	Trans IN key
C. BILL	Cumulated Bill key
CASH TIP	Cash Tip key
NON CASH TIP	Non Cash Tip key
TIP PAID	Tip Paid key

3. Mode switch

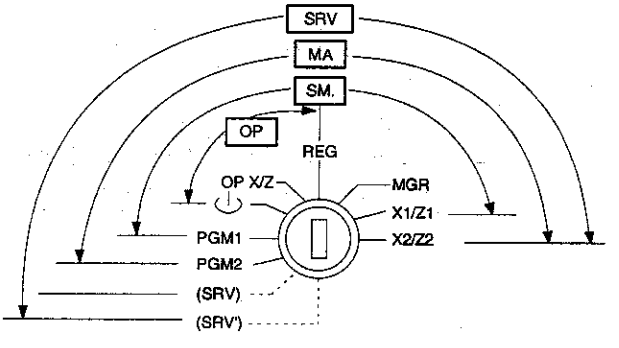


Fig. 3-1

* The key can be removed in the REG or OFF position.
* In the SRV' mode, key inputs are prohibited and no display is made.
* With the key in the off position power is still supplied to the main PWB.

[Functions]

- Function for each key position
- SRV': System reset
- SRV: Service mode (Service programming)
- PGM2: Allows programming of an item that is not changed frequently, in addition to the PGM1 mode programming.

- PGM1: Allows programming of items frequently changed (e.g. department, PLU pricing, and discount rate setting).
- OP/XZ: Allows X or Z operation by servers or cashiers.
- REG: Allows registrations.
- MGR: Allows the operations, by authorized person such as a manager (e.g. correction after transaction finished or cancellation of entry limits), which are not permitted to ordinary cashiers.
- X1/Z1: Allows reading and resetting of a day's sales total.
- X2/Z2: Allows reading or resetting sales totals in a specified period.
- ⏻: Switching off the display to prevent key board entries.
  (The setting does not turn off the AC power.)

4. Display

1) Layout

① Operator display

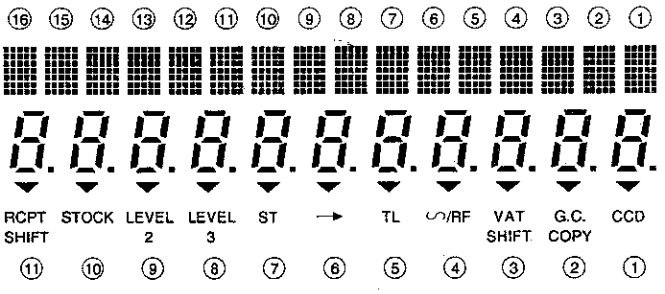


Fig. 4-1

	Dot display	7 seg display
No. of positions	16	11
Color of display	Green	Green
Character size	8.8(H) × 5.5(W) mm	12(H) × 6(W) mm
Font	Dot matrix (5×7)	7 segments

② Customer display

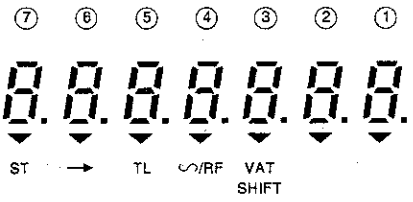


Fig. 4-2

No. of positions	7
Color of display	Green
Character size	13(H) × 6(W) mm
Font	7 segments

2) Display contents

Dot display

Display contents	Position	Description
Entry data	16-5	Numerical value and characters
Item name, etc	16-5	Department text, PLU text, etc.
Error message	16-5	Message to indicate an error
Machine state	4-1	Mode and various kinds of symbol guidance

7 seg. display

Display contents	Position	Description
Amount	8-1	Character pattern
No. of repeats	11	The number of repeats starts with "2". When the number of repeats is 10 or more, the first digit alone is displayed.
Minus sign	9-4	The floating minus sign "–" is displayed.
Sentinel	11	The decimal point appears when the cash in drawer amount exceeds a programmed sentinel amount.

3) Lamp (▼ comes on)

Display contents	Description
CCD	The lamp lights up during the execution of compulsory cash/cheque declaration
G.C. COPY	The lamp is on while the machine is in the GUEST CHECK COPY mode.
∽ / RF	The lamp lights up when a void entry or refund entry are made.
TL	The lamp lights up when a transaction is finalized.
→	The lamp lights up when change amount is displayed after tendering.
ST	The lamp lights up when each subtotal is displayed.
LEVEL 2	The lamp lights up when the PLU price level is 2.
LEVEL 3	The lamp lights up when the PLU price level is 3.
STOCK	The lamp lights up when a PLU whose stock is negative is entered.
RCPT SHIFT	The lamp lights up when the receipt shift key is pressed.
VAT SHIFT	The lamp lights up when the VAT SHIFT key is pressed.

4) Machine state symbols

Display	Description
No. display	REG, ⏻ and (SRV') mode
MGR.	MANAGER mode
VOID	VOID mode
SRV.	SERVICE mode
PGM1	PGM1 mode
PGM2	PGM2 mode
0001	Clerk code appears when the clerk assignment system is the real clerk key, push-button clerk key or clerk code system.
OPXZ	OP X/Z mode; this symbol appears except for the above case.
X / Z1	X1 / Z1 mode
X / Z2	X2 / Z2 mode
VAL	Compulsory validation printing
SLIP	Compulsory slip printing
#	Compulsory non-add code entry
LOCK	No cashier is specified

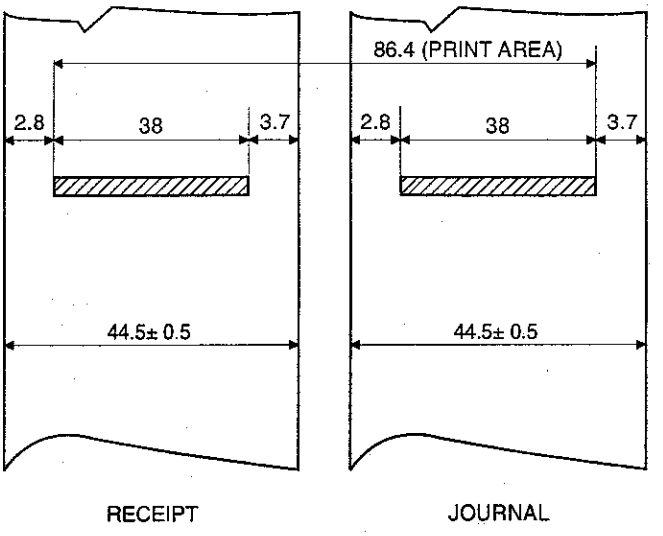
5. Printer (M-820)

1) Specifications

- Part number: M-820
- No. of stations: 2
- Printing system: Mechanical serial dot
- Direction of printing: Bidirectional
- Printing capacity: Receipt – 21 characters
Journal – 21 characters
Validation – 47 characters (one line only)
- Character size: 2.7(H) × 1.5(W) mm
Print pitch:
Column distance 1.83 mm
Row distance 4.3 mm
- Total number of dots: (95 dots per line) × 2 (receipt and journal)
Validation Max 213 dot
- Font: 7 × 7 dots
Space between characters – 1 dot
- Print speed: Approx. 2.7 lines/sec. (Approx. 26.4V)
- Paper feed speed: Receipt – Approx. 28.2 lines/sec.
Journal – Approx. 11.2 lines/sec.
- Reliability: MCBF – 2 million lines (excluding the print head)
Head life – 40 million characters (in the case of printing average 2 dots per character per wire
- Validation form sensor: No

2) Printing area

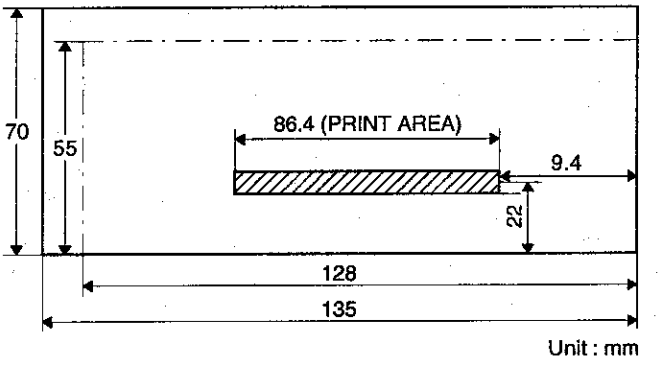
Receipt/journal



Unit : mm

Fig. 5-1

Validation form



Unit : mm

Fig. 5-2

3) Paper

- Paper roll dimensions: 44.5±0.5mm in width, 80mm in diameter
- Paper quality: Journal
Bond paper (paper thickness: 0.06 to 0.09mm, paper weight: 52.3 to 64g/m^2)
Validation form
Thickness: 0.07 to 0.14mm
Size: 135mm or more (W) × 70mm or more (H)

4) Inking

- Ink supply system: Ink ribbon
- Form: Cartridge
- Specification: Material – Nylon
- Ribbon life: 6 million characters
- Print color: Purple (single color)

5) Logo stamp

- Material: Porous rubber
- Stamp color: Purple (single color)
- Max. stamp size: 30(W) × 20(H) mm
- Ink refill: Allowed (UINK-1001CCZZ: 5CC)

CHAPTER 2. OPTIONS

1. System configuration

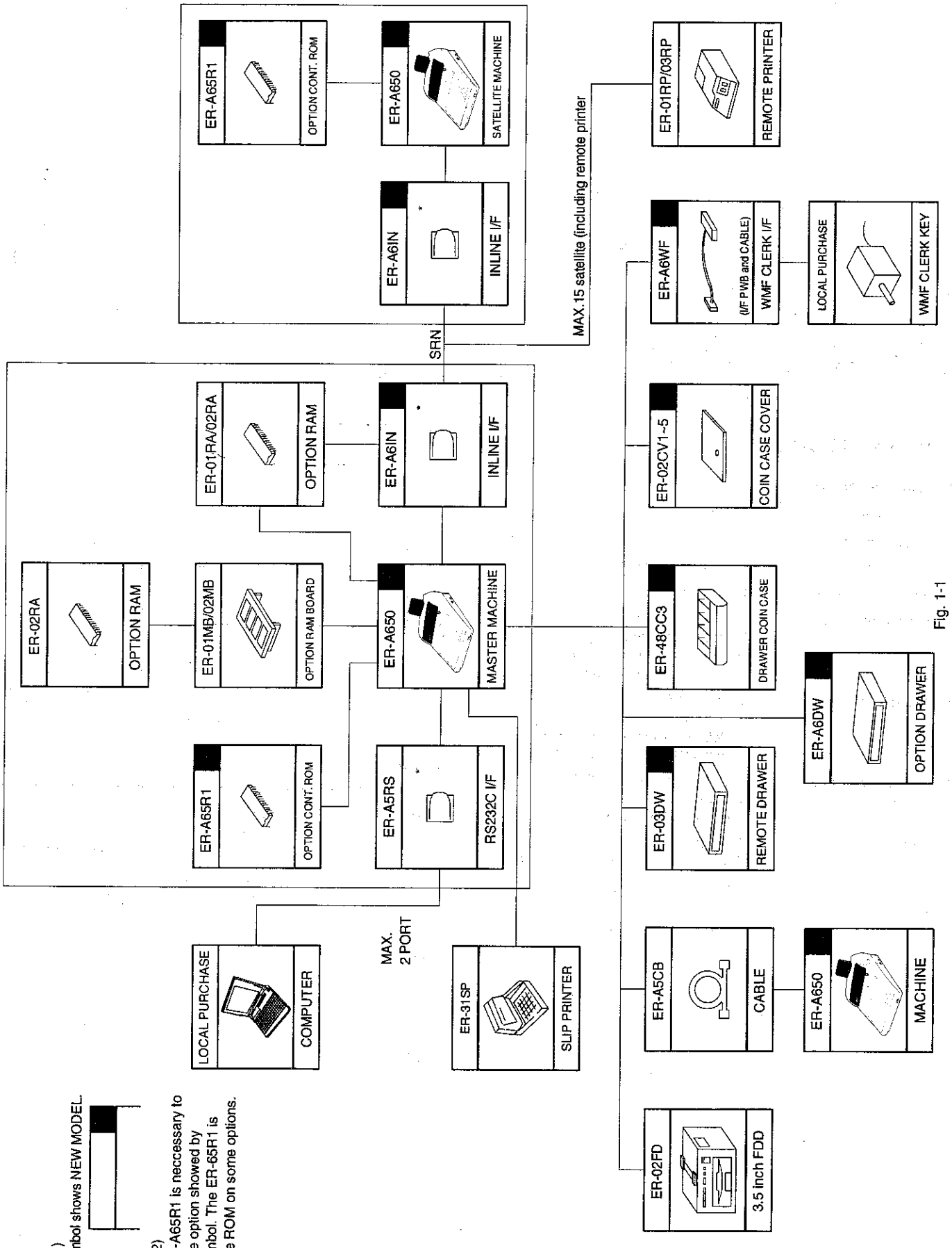


Fig. 1-1

2. Options

NO	NAME	MODEL	DESCRIPTION
1	REMOTE PRINTER	ER-01RP	Via SRN I/F (ER-A6IN)
		ER-03RP	
2	OPTION DRAWER	ER-A6DW	4B/8C
3	REMOTE DRAWER	ER-03DW	4B/8C, MAX. 3 units
4	COIN CASE	ER-48CC3	4B/8C
5	COIN CASE COVER	ER-02CV1~5	For ER-48CC3
6	EXPANSION RAM CHIP	ER-01RA	32K bytes RAM chip
		ER-02RA	128K bytes RAM chip
7	EXPANSION MEMORY BOARD	ER-01MB	128K bytes memory board with 3 IC sockets (For ER-02RA)
		ER-02MB	1M bytes memory board
8	IN-LINE SYSTEM	ER-A6IN	SRN inline I/F
9	ON-LINE SYSTEM	ER-A5RS	2ports RS-232 I/F
10	CONTROL ROM	ER-A65R1	Control for ER-A6IN, ER-A5RS
11	PRESETS LOADER	ER-02FD	FD unit
12	CONNECTION CABLE	ER-A5CB	Loader cable
13	SLIP PRINTER	ER-31SP	
14	WMF CLERK I/F	ER-A6WF	

3. Service options

NO.	NAME	PARTS CODE	PRICE RANK	DESCRIPTION
1	SERVICE KEY	LKGIM7113RCZZ	AK	For the mode switch
2	DRIP-PROOF SWITCH COVER	GCOVB7047RCZZ	BA	
3	MODE KEY GRIP COVER	LKGIM7126RCZZ	AL	OP key only
4	BLANK KEY SHEET	PSHEK6777RCZZ	AC	
5	JOURNAL NEAR END SENSOR	DKIT-8643RCZZ	BG	
6	ADDITIONAL CLERK KEY	LKGIM7346RCZZ	AX	Key No. = 7
		LKGIM7347RCZZ	AX	Key No. = 8
		LKGIM7348RCZZ	AX	Key No. = 9
		LKGIM7349RCZZ	AX	Key No. = 10
		LKGIM7350RCZZ	AX	Key No. = 11
		LKGIM7351RCZZ	AX	Key No. = 12
		LKGIM7352RCZZ	AX	Key No. = 13
		LKGIM7353RCZZ	AX	Key No. = 14
		LKGIM7354RCZZ	AX	Key No. = 15
7	DRAWER FIXING KIT	DKIT-8633RCZZ	BE	

4. Service tools

NO.	NAME	PARTS CODE	PRICE RANK
1	EXPANSION PWB	CKOG-6708RCZZ	BU
2	SIO LOOP BACK CONECTOR	UKOG-6704RCZZ	AV

5. Supplies

NO.	NAME	PARTS CODE	PRICE RANK	DESCRIPTION
1	ROLL PAPER	DPAPR1006CSZZ	AR	5rolls/pack
2	INK RIBBON	PRBN-6640RCZZ	AX	
3	INK FOR STAMP	UINK-1001CCZZ	AK	5cc
4	KEY SHEET	PSHEK6804RCZZ	AD	Programming character sheet
		PSHEK6796RCZZ	AK	Standard character sheet
		PSHEK6777RCZZ	AC	Blank character sheet

6. Options

For installation of the options, refer to the Installation Manual which is separately issued from this manual.

7. How to use service tools

7-1. SIO loop back connector: UKOG-6704RCZZ

- External view

Signal	Pin
GND	1
$\overline{ER}$	2
$\overline{DR}$	3
RXD	4
TXD	5
$\overline{CD}$	6
$\overline{RR}$	7
$\overline{CS}$	8
$\overline{RS}$	9

N.C

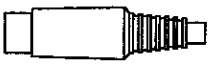


Fig. 7-1

- Purpose: Used for "SIO Test 1 (SIO loop back test)."
- Installation view:

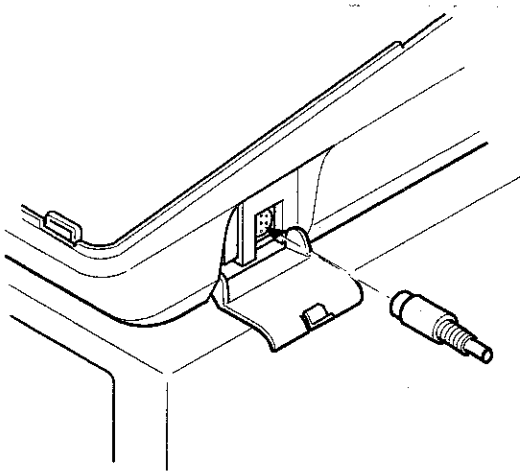


Fig. 7-2

- How to use: Connect the UKOG-6704RCZZ to the body and perform the following key operations:

  SRV mode: 117 → [TL]

7-2. Expansion PWB: CKOG-6708RCZZ

- External view

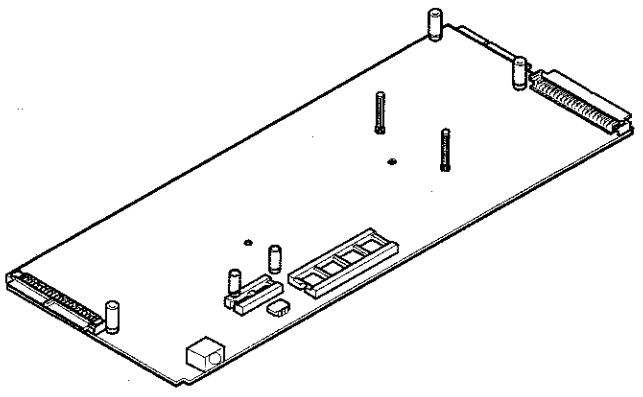


Fig. 7-3

Purpose 1: Used for servicing and repairing of options (such as the ER-A6IN and the ER-A5RS) which are connected with the main body option connector.

[Procedure 1]
Use an insulator base as that in Fig. 7-4 (shaded section) and perform servicing.

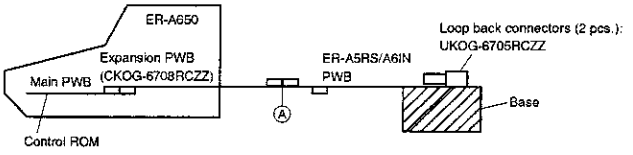


Fig. 7-4

To check the option I/F PWB from the solder side, connect the I/F PWB to OPTCN2. To check from the parts side, connect to OPTCN3.

(Note) The option I/F PWB should be held horizontally so that no excessive stress is applied to connecting section Ⓐ in Fig. 7-4.

[Procedure 2]

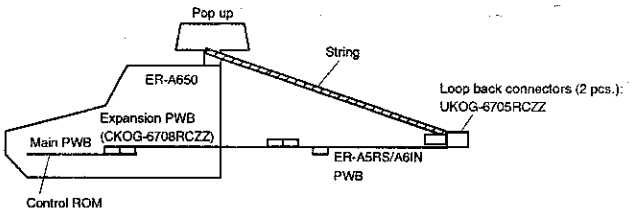


Fig. 7-5

As shown in Fig. 7-5, put a string between the pop up and the option PWB angle and adjust the length of the string so that the CKOG-6708RCZZ and the option PWB. Then perform servicing.

Purpose 2: The CKOG-6708RCZZ is equipped with the loop back connector for checking the ER-A5CB (SIO cable) cable operations.

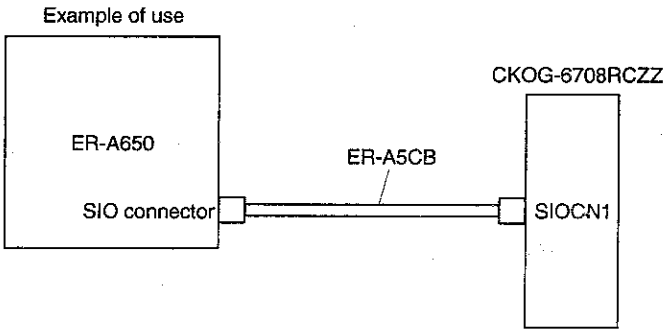


Fig. 7-6

Checking procedure

1) Connect the ER-A5CB between an ECR body and the CKOG-6708RCZZ SIOCN1. (The SIO functions of the ECR must be normal.)
2) Perform test function "117 (SIO loop back test)" and judge it normal or abnormal.

CHAPTER 3. SRV. RESET AND MASTER RESET

1. SRV. reset (Program Loop Reset)

Used to return the machine back to its operational state after a lock-up has occurred.

Procedure

- Method 1
  1) Turn off the AC switch.
  2) Set the mode switch to (SRV') position.
  3) Turn on the AC switch.
  4) Turn to (SRV) position from (SRV') position.
- Method 2
  1) Set the mode switch to PGM2 position.
  2) Turn off the AC switch.
  3) While holding down JOURNAL FEED key and RECEIPT FEED key, Turn on the AC switch.

Note: When disassembling and reassembling always power up using method 1 only. Method 2 will not reset the CKDC4.

Note: SRV programming job#926-B must be set to "4" to allow PGM program loop reset.

2. Master reset (All memory clear)

There are two possible methods to perform a master reset.

- MRS-1

Used to clear all memory contents and return machine back to its initial settings. return keyboard back to default. for default keyboard layout.

Procedure

1) Turn off the AC switch.
2) Set the MODE switch to the (SRV') position.
3) Turn on the AC switch.
4) While holding down JOURNAL FEED key, turn to (SRV) position from (SRV') position.

- MRS-2

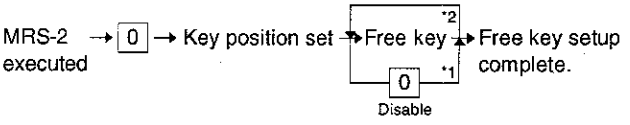
  Used to clear all memory and keyboard contents.
  This reset returns all programming back to defaults. The keyboard must be entered by hand.
  This reset is used if an application needs different keyboard layout other than that supplied by a normal MRS-1.

Procedure

1) Turn off the AC switch.
2) Set the MODE switch to the (SRV') position.
3) Turn on the AC switch.
4) While holding down JOURNAL FEED key and RECEIPT FEED key, turn to (SRV) position from (SRV') position.
5) Key position assignment:

∗ After the execution of MRS-2, only the RECEIPT FEED and JOURNAL FEED keys can remain effective on key assignment. Any key can be assigned on any key position on the main keyboard.

[key setup procedure]



NOTES:

∗1: When the 0 key is pressed, the key of the key number on display is disabled.

∗2: Push the key on the position to be assigned. With this, the key of the key number on display is assigned to that key position.

∗3: When relocating the keyboard, the PGM 1/2 use standard key layout.

Key number	Key name	Key number	Key name
1	Numeric key "0"	10	Numeric key "9"
2	Numeric key "1"	11	Numeric key "00"
3	Numeric key "2"	12	Numeric key "000"
4	Numeric key "3"	13	Decimal point key
5	Numeric key "4"	14	CL key
6	Numeric key "5"	15	⊗ key
7	Numeric key "6"	16	ST key
8	Numeric key "7"	17	TL key
9	Numeric key "8"		

CHAPTER 4. HARD WARE DESCRIPTION

1. Hard ware block diagram

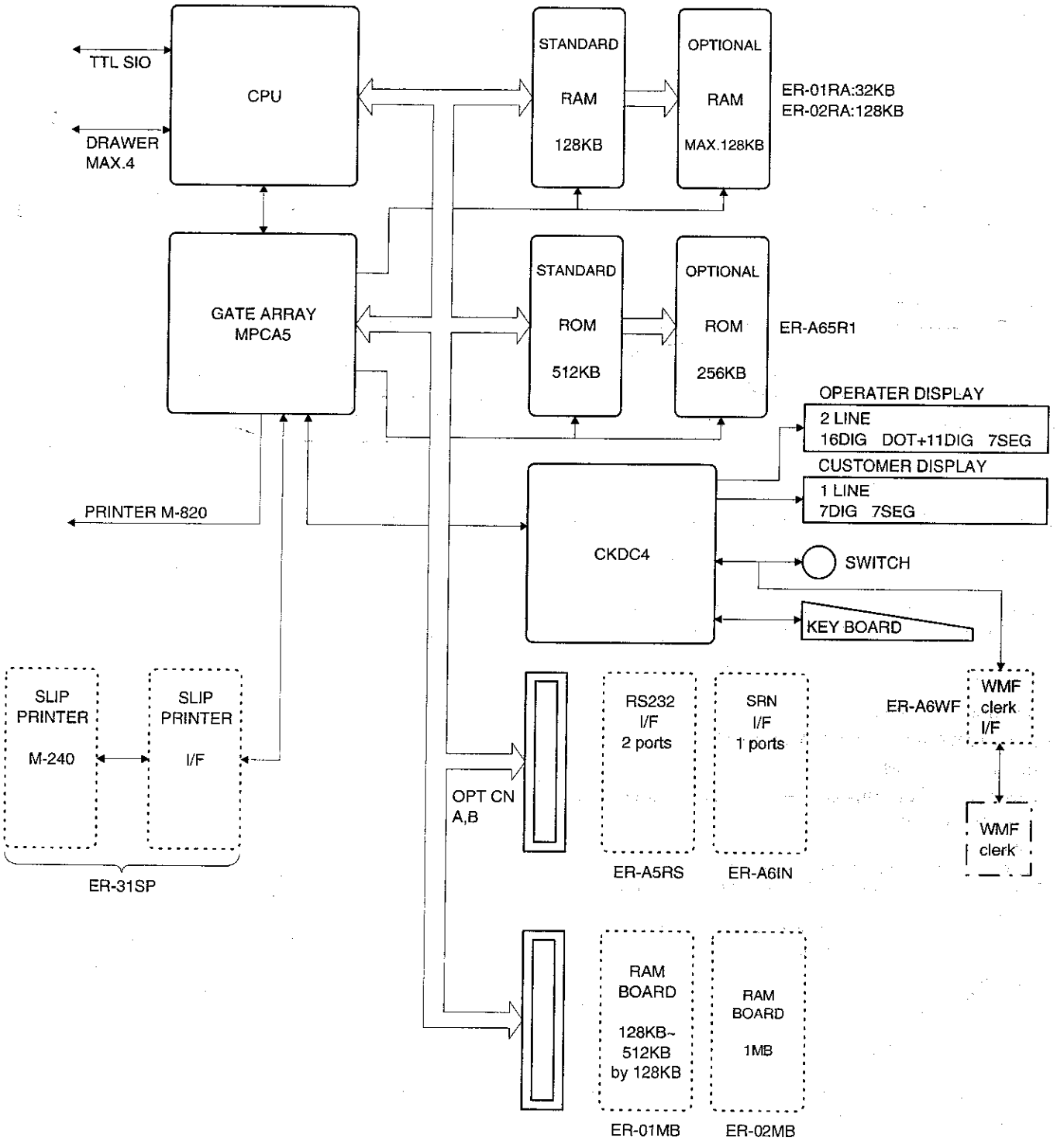
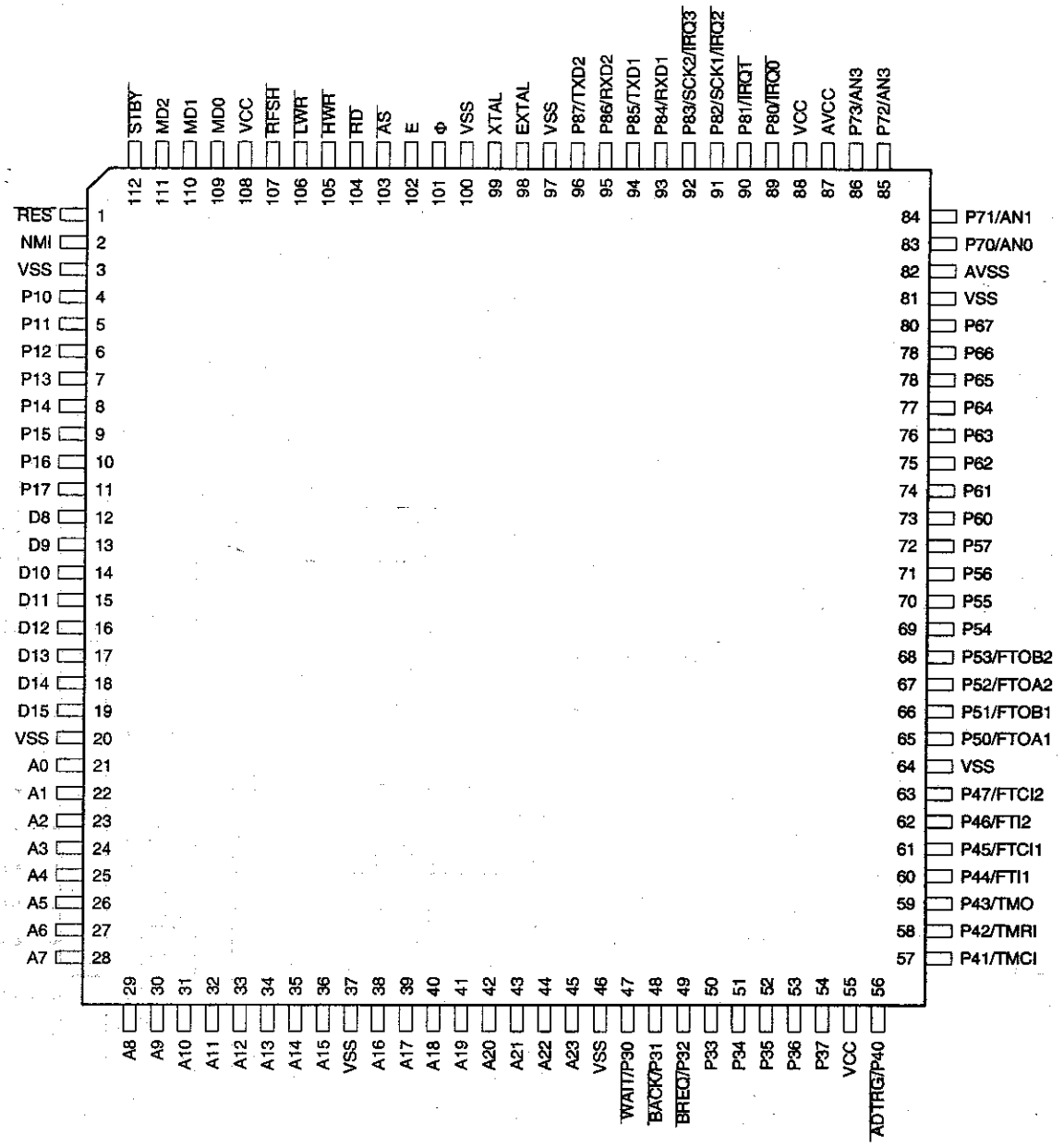


Fig. 1-1

2. Description of main LSI's

2-1. CPU (HD6415108FX)

1) Pin configuration



HD6415108FX pin configuration

Fig. 2-1

2) Block diagram

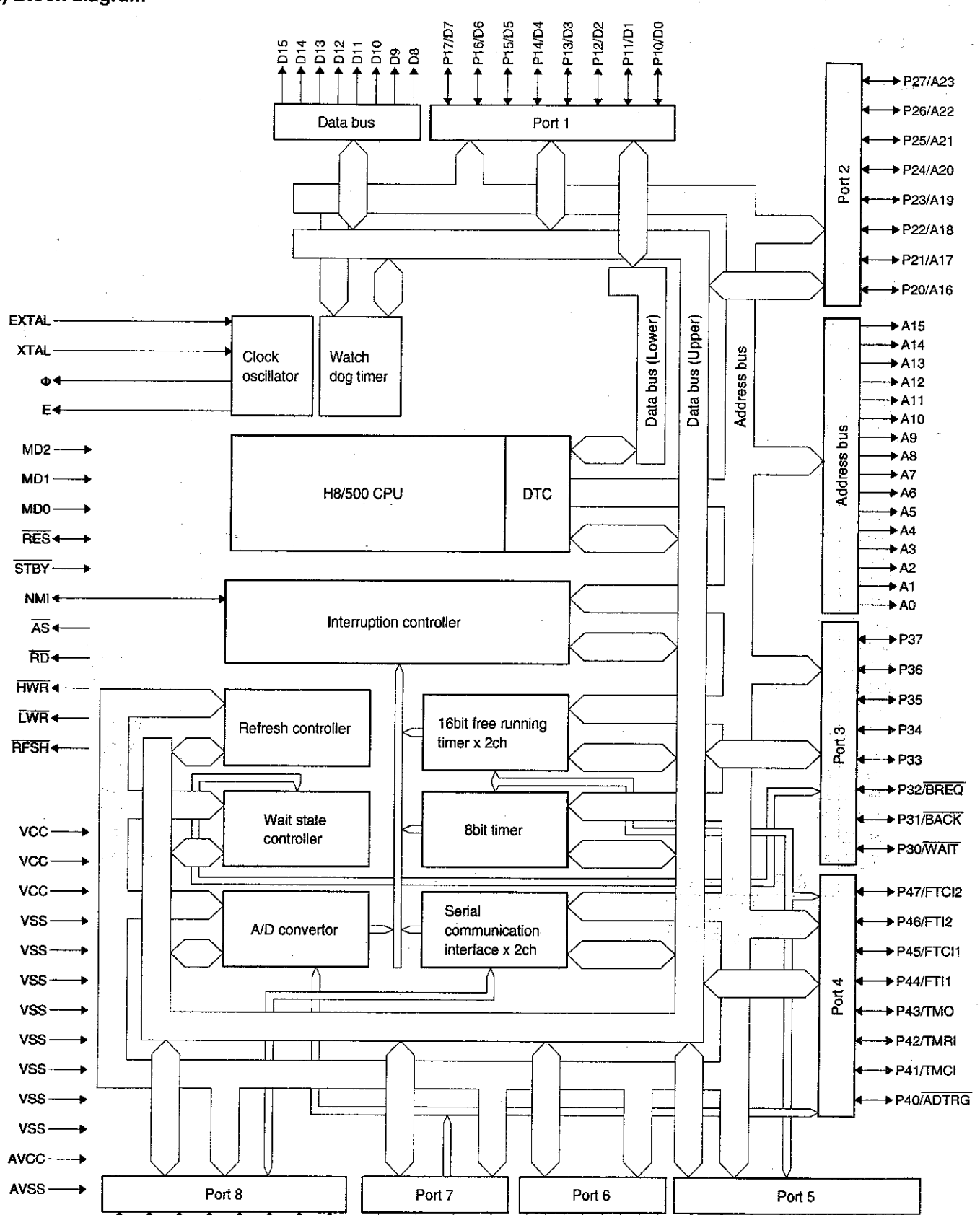


Fig. 2-2

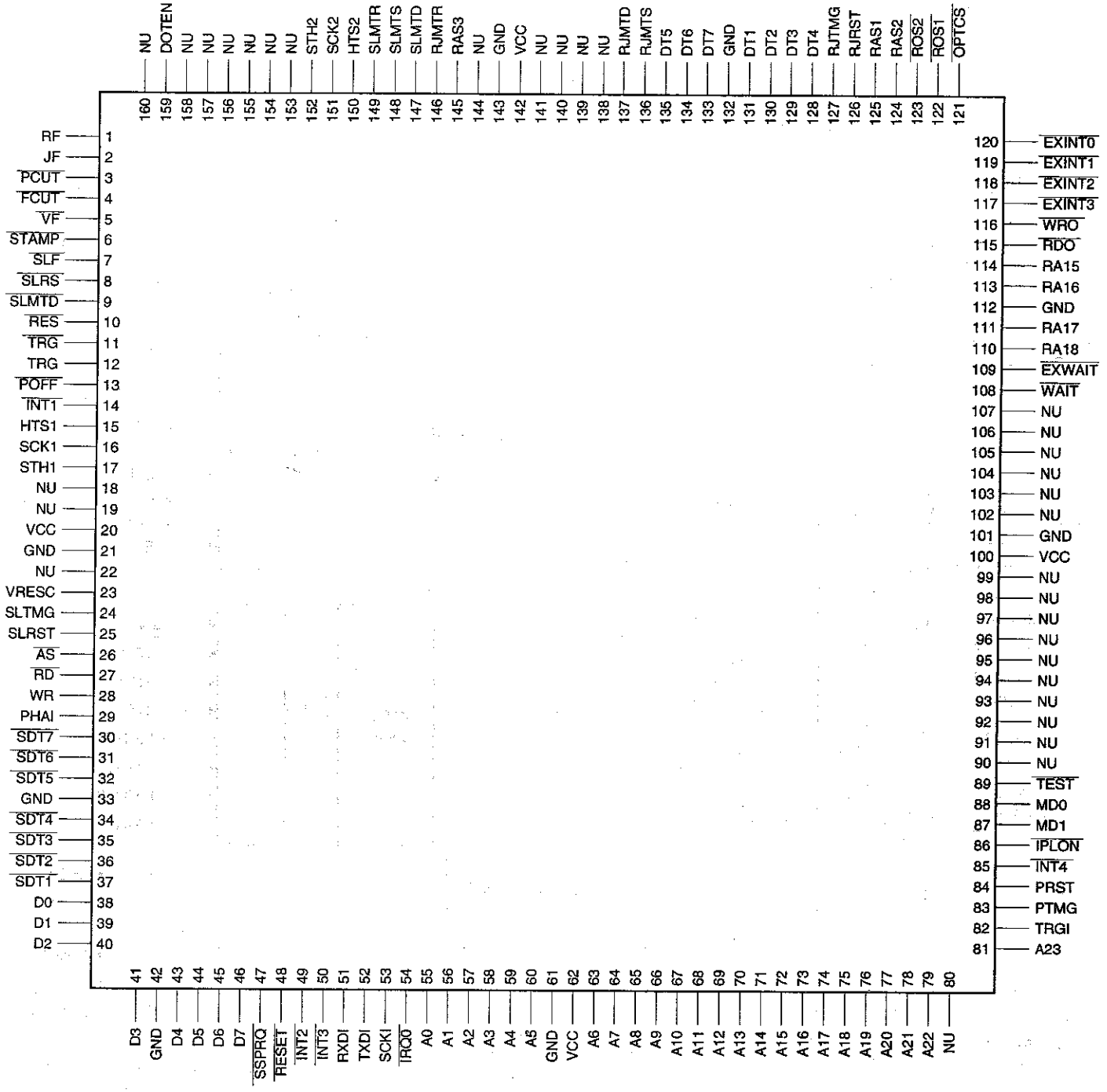
3) Pin description

Pin No.	Symbol	Signal name	In/ Out	Function
1	$\overline{RES}$	$\overline{RESET}$	I/O	Reset input
2	NMi	NMi	In	Non-maskable interrupt input for SSP interrupt input.
3	VSS	VSS	In	GND
4	P10	Nu	In	GND
5	P11	Nu	In	GND
6	P12	Nu	In	GND
7	P13	Nu	In	GND
8	P14	Nu	In	GND
9	P15	Nu	In	GND
10	P16	Nu	In	GND
11	P17	Nu	In	GND
12	D8	D0	I/O	Data bus
13	D9	D1	I/O	Data bus
14	D10	D2	I/O	Data bus
15	D11	D3	I/O	Data bus
16	D12	D4	I/O	Data bus
17	D13	D5	I/O	Data bus
18	D14	D6	I/O	Data bus
19	D15	D7	I/O	Data bus
20	VSS	VSS	In	GND
21	A0	A0	Out	Address bus
22	A1	A1	Out	Address bus
23	A2	A2	Out	Address bus
24	A3	A3	Out	Address bus
25	A4	A4	Out	Address bus
26	A5	A5	Out	Address bus
27	A6	A6	Out	Address bus
28	A7	A7	Out	Address bus
29	A8	A8	Out	Address bus
30	A9	A9	Out	Address bus
31	A10	A10	Out	Address bus
32	A11	A11	Out	Address bus
33	A12	A12	Out	Address bus
34	A13	A13	Out	Address bus
35	A14	A14	Out	Address bus
36	A15	A15	Out	Address bus
37	VSS	VSS	In	GND
38	A16	A16	Out	Address bus
39	A17	A17	Out	Address bus
40	A18	A18	Out	Address bus
41	A19	A19	Out	Address bus
42	A20	A20	Out	Address bus
43	A21	A21	Out	Address bus
44	A22	A22	Out	Address bus
45	A23	A23	Out	Address bus
46	VSS	VSS	In	GND
47	$\overline{WAIT}$	$\overline{WAIT}$	In	Wait signal
48	$\overline{BACK}$	$\overline{BACK}$	Out	Bus control request acknowledge
49	$\overline{BREQ}$	$\overline{BREQ}$	In	Bus control request
50	P33	DOPS	In	Drawer open signal
51	P34	$\overline{DR0}$	Out	Option drawer open signal
52	P35	$\overline{DR1}$	Out	Remote drawer No.1 open signal
53	P36	$\overline{DR2}$	Out	Remote drawer No.2 open signal
54	P37	$\overline{DR3}$	Out	Remote drawer No.3 open signal
55	VCC	VCC	In	+5V
56	P40	$\overline{IFV}$	In	Slip printer (M-240) interface connect signal
57	P41	$\overline{PTMG}$	In	Printer (M-820) timing signal
58	P42	$\overline{TOF}$	In	Slip printer (M-240) TOF sensor signal
59	P43	$\overline{BOF}$	In	Slip printer (M-240) BOF sensor signal
60	P44	$\overline{PRST}$	In	Printer (M-820) reset signal
61	P45	$\overline{NEJ}$	In	Near end sensor journal side
62	P46	$\overline{SHEN}$	In	CKDC interface shift enable signal
63	P47	$\overline{NER}$	In	GND
64	VSS	VSS	In	GND
65	P50	TRGI	Out	Dot pulse adjust signal
66	P51	$\overline{PSTOP}$	Out	Nu
67	P52	$\overline{CKDCR2}$	Out	Nu
68	P53	OPDS	In	GND
69	P54	FVPON	Out	Nu
70	P55	FMRS	In	Nu
71	P56	$\overline{SLIPLMP}$	Out	Nu
72	P57	$\overline{STOP}$	Out	System reset output. Normally
73	P60	$\overline{ER}$	Out	SIO control signal (Equipment ready)
74	P61	$\overline{DR}$	In	SIO control signal (Data set ready)
75	P62	$\overline{CS}$	In	SIO control signal (Clear to send)
76	P63	$\overline{CD}$	In	SIO control signal (Carrier detect)
77	P64	$\overline{RR}$	Out	SIO control signal (Ready to receive)
78	P65	$\overline{RS}$	Out	SIO control signal (Request to send)
79	P66	$\overline{CI}$	In	GND
80	P67	—	In	GND
81	VSS	VSS	In	GND
82	AVSS	AVSS	In	GND
83	P70	VPJ/VPT	In	Validation sensor journal/top
84	P71	VPR/VPB	In	Validation sensor receipt/bottom
85	P72	VPTEST	In	+24V test input
86	P73	$\overline{VPPS}$	In	Validation sense signal
87	AVCC	AVCC	In	+5V
88	VCC	VCC	In	+5V
89	P80	$\overline{IRQ0}$	In	Interrupt signal 0
90	P81	$\overline{IRQ1}$	In	Interrupt signal 1
91	P82	$\overline{IR02}$	In	Interrupt signal 2
92	P83	SCK	In	CKDC Interface sync shift clock
93	P84	RXD	In	SIO control signal (Receive data)

Pin No.	Symbol	Signal name	In/ Out	Function
94	P85	TXD	Out	SIO control signal (Transmit data)
95	P86	STH	In	CKDC Interface shift input data
96	P87	HTS	Out	CKDC Interface shift output data
97	VSS	VSS	In	GND
89	EXTAL	EXTAL	In	9.830MHZ crystal oscillator connection
99	XTAL	XTAL	In	9.830MHZ crystal oscillator connection
100	VSS	VSS	In	GND
101	ϕ	ϕ	Out	System clock
102	E	E	Out	Nu
103	$\overline{AS}$	$\overline{AS}$	Out	Address strobe
104	$\overline{RD}$	$\overline{RD}$	Out	Read
105	$\overline{HWR}$	$\overline{WR}$	Out	Write
106	$\overline{LWR}$	$\overline{LWR}$	Out	Nu
107	$\overline{RFSH}$	$\overline{RFSH}$	Out	Refresh cycle
108	VCC	VCC	In	+5V
109	MD0	MD0	In	+5V (MODE 3)
110	MD1	MD1	In	+5V (MODE 3)
111	MD2	MD2	In	GND
112	$\overline{STBY}$	$\overline{STBY}$	In	+5V (Nu)

2-2. G.A (MPCA5)

1) Pin configuration



GATE ARRAY (F258016PC)
MPCA5

Fig. 2-3

2) Block diagram

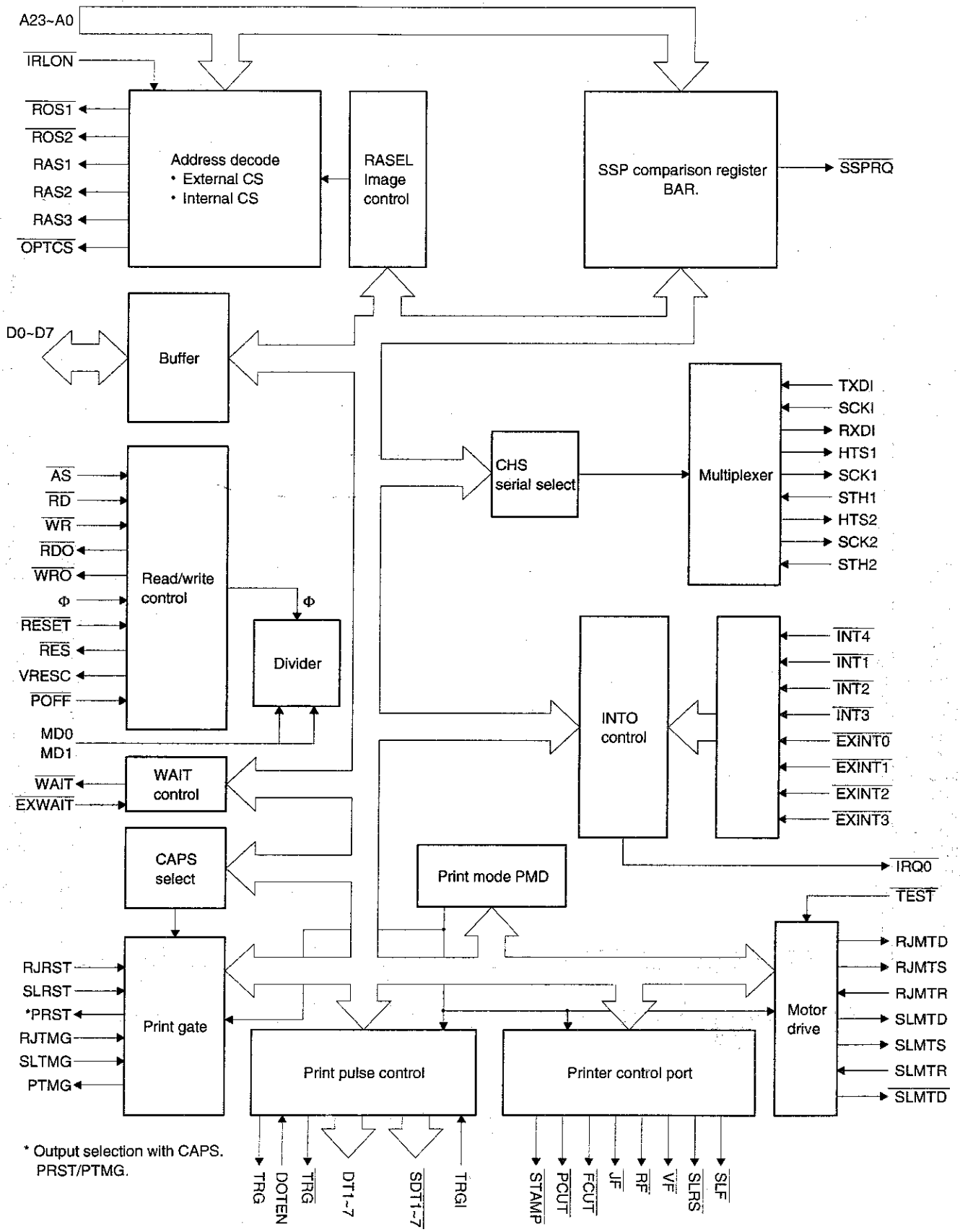


Fig. 2-4

3) Pin description

Pin No.	Signal name	In/ Out	Function
1	RF	Out	Receipt side paper feed solenoid
2	JF	Out	Journal side paper feed solenoid
3	$\overline{PCUT}$	Out	Printer (M-820) partial cut signal = Not used
4	$\overline{FCUT}$	Out	Printer (M-820) auto cut signal = Not used
5	$\overline{VF}$	Out	Multi line validation paper feed = Not used
6	$\overline{STAMP}$	Out	Printer (M-820) stamp signal
7	$\overline{SLFS}$	Out	Slip printer (M-240) paper feed singnal
8	$\overline{SLRS}$	Out	Slip printer (M-240) release signal
9	$\overline{SLMTD}$	Out	Slip printer (M-240) motor drive signal
10	$\overline{RES}$	Out	Peripheral output reset
11	$\overline{TRG}$	Out	Dot head trigger signal (M-240)
12	TRG	Out	Dot head trigger signal (M-820)
13	$\overline{POFF}$	In	Interrupt input
14	$\overline{INT1}$	In	Interrupt signal (Key interrupt request)
15	HTS1	Out	8 bit serial port output
16	SCK1	Out	Serial port shift clock output
17	STH1	In	8 bit serial port input
18	—	—	Nu
19	—	—	Nu
20	VCC	—	+5V
21	GND	—	GND
22	—	—	Nu
23	VRESC	Out	Turns active when reset and power down is met
24	SLTMG	In	Slip printer timing signal
25	SLRST	In	Slip printer reset signal
26	$\overline{AS}$	In	Address strobe
27	$\overline{RD}$	In	Read strobe
28	$\overline{WR}$	In	Write strobe
29	ϕ	In	(ϕ) System clock
30	$\overline{SDT7}$	Out	Printhead drive signal (dot7)
31	$\overline{SDT6}$	Out	Printhead drive signal (dot6)
32	$\overline{SDT5}$	Out	Printhead drive signal (dot5)
33	GND	—	GND
34	$\overline{SDT4}$	Out	Printhead drive signal (dot4)
35	$\overline{SDT3}$	Out	Printhead drive signal (dot3)
36	$\overline{SDT2}$	Out	Printhead drive signal (dot2)
37	$\overline{SDT1}$	Out	Printhead drive signal (dot1)
38	D0	I/O	Data bus
39	D1	I/O	Data bus
40	D2	I/O	Data bus
41	D3	I/O	Data bus
42	GND	—	GND
43	D4	I/0	Data bus
44	D5	I/0	Data bus
45	D6	I/0	Data bus
46	D7	I/0	Data bus
47	$\overline{SPRQ}$	Out	SSP interrupt request
48	$\overline{RESET}$	In	MPCA5 reset
49	$\overline{INT2}$	In	Interrupt signal (Nu)
50	$\overline{INT3}$	In	Interrupt signal (Nu)
51	RXDI	Out	8 bit serial port output to CPU
52	TXDI	In	8 bit serial port input from CPU

Pin No.	Signal name	In/ Out	Function
53	SCKI	In	Serial port shift clock input from CPU.
54	$\overline{IRQ0}$	Out	Interrupt request to CPU
55	A0	In	Address bus
56	A1	In	Address bus
57	A2	In	Address bus
58	A3	In	Address bus
59	A4	In	Address bus
60	A5	In	Address bus
61	GND	—	GND
62	VCC	—	+5V
63	A6	In	Address bus
64	A7	In	Address bus
65	A8	In	Address bus
66	A9	In	Address bus
67	A10	In	Address bus
68	A11	In	Address bus
69	A12	In	Address bus
70	A13	In	Address bus
71	A14	In	Address bus
72	A15	In	Address bus
73	A16	In	Address bus
74	A17	In	Address bus
75	A18	In	Address bus
76	A19	In	Address bus
77	A20	In	Address bus
78	A21	In	Address bus
79	A22	In	Address bus
80	—	—	Nu
81	A23	In	Address bus
82	TRGI	In	Dot pulse control/drive signal
83	$\overline{PTMG}$	Out	Printer timing signal
84	$\overline{PRST}$	Out	Printer reset signal
85	$\overline{INT4}$	In	Interrupt signal
86	$\overline{IPLON}$	In	Nu
87	MD1	In	Mode select input
88	MD0	In	Mode select input
89	$\overline{TEST}$	In	Nu
90	—	—	Nu
91	—	—	Nu
92	—	—	Nu
93	—	—	Nu
94	—	—	Nu
95	—	—	Nu
96	—	—	Nu
97	—	—	Nu
98	—	—	Nu
99	—	—	Nu
100	VCC	—	+5V
101	GND	—	GND
102	—	—	Nu
103	—	—	Nu
104	—	—	Nu
105	—	—	Nu
106	—	—	Nu

Pin No.	Signal name	In/ Out	Function	
107	—	—	Nu	
108	$\overline{WAIT}$	Out	Wait request signal	
109	$\overline{EXWAIT}$	In	External wait control input signal	
110	RA18	Out	Nu	
111	RA17	Out	Nu	
112	GND	—	GND	
113	RA16	Out	Nu	
114	RA15	Out	Nu	
115	$\overline{RDO}$	Out	Expansion RD signal	Option
116	$\overline{WRO}$	Out	Expansion WR signal	
117	$\overline{EXINT3}$	In	Expansion interruption signal 3	Option
118	$\overline{EXINT2}$	In	Expansion interruption signal 2	
119	$\overline{EXINT1}$	In	Expansion interruption signal 1	
120	$\overline{EXINT0}$	In	Expansion interruption signal 0	
121	$\overline{OPTCS}$	Out	Chip select base signal for expansion option	
122	$\overline{ROS1}$	Out	ROM 1 chip select signal	
123	$\overline{ROS2}$	Out	ROM 2 chip select signal	
124	RAS2	Out	RAM 2 chip select signal	
125	RAS1	Out	RAM 1 ship select signal	
126	RJRST	In	M820 reset signal	
127	RJTMG	In	M820 timing signal	
128	DT4	Out	M820 dot signal	
129	DT3	Out	M820 dot signal	
130	DT2	Out	M820 dot signal	
131	DT1	Out	M820 dot signal	
132	GND	—	GND	
133	DT7	Out	M820 dot signal	
134	DT6	Out	M820 dot signal	
135	DT5	Out	M820 dot signal	
136	RJMTS	Out	M820 motor brake signal	
137	RJMTD	Out	M820 motor drive signal	
138	—	—	Nu	
139	—	—	Nu	
140	—	—	Nu	
141	—	—	Nu	
142	VCC	—	+5V	
143	GND	—	GND	
144	—	—	Nu	
145	RAS3	Out	Nu	
146	RJMTR	In	M820 motor lock detection signal	
147	SLMTD	In	Nu	
148	SLMTS	In	Nu	
149	SLMTR	In	GND	
150	HTS2	Out	Nu	
151	SCK2	Out	Nu	
152	STH2	In	Nu	
153	—	—	Nu	
154	—	—	Nu	
155	—	—	Nu	
156	—	—	Nu	
157	—	—	Nu	
158	—	—	Nu	
159	DOTEN	Out	Dot drive enable signal	
160	—	—	Nu	

2-3. CKDC4 (HD404728A20FS)

1) General description

The CKDC4 is a 4-bit microcomputer developed for the ER-A670 and provides functions to control the real-time clock, keys, and displays. The basic functions of the CKDC4 are shown below.

Keys: The CKDC4 is capable of controlling a maximum of 256 momentary keys. (Sharp 2-key rollover control)
Simultaneous scanning of key and switch
(When a key is scanned, the state of a mode and clerk switch is also buffered. The host can scan the state of switch together with the key entry data at the same time the key is scanned.)

Switches: Mode switch with 14 positions maximum
8-bit clerk (cashier) switch
2-bit feed switch
1-bit receipt on/off switch
1-bit option switch
4-bit general-purpose switch (1-bit is used for keyboard select)

Displays: 16-column dot display
12-column 7-segment display (column digit selectable)
All column blink controlled for the dot and 7-segment display decimal point and indicators
Programmable patterns for 7-segment display:
Four patterns
Internal driver for 7-segment display

Buzzer: Single tone control

Clock: Year, month, day of month, day of week, hour, minute

Alarm: Hour, minute

Interrupt request (event control):
Detection of key input, switch position change, alarm issue, and counter overflow

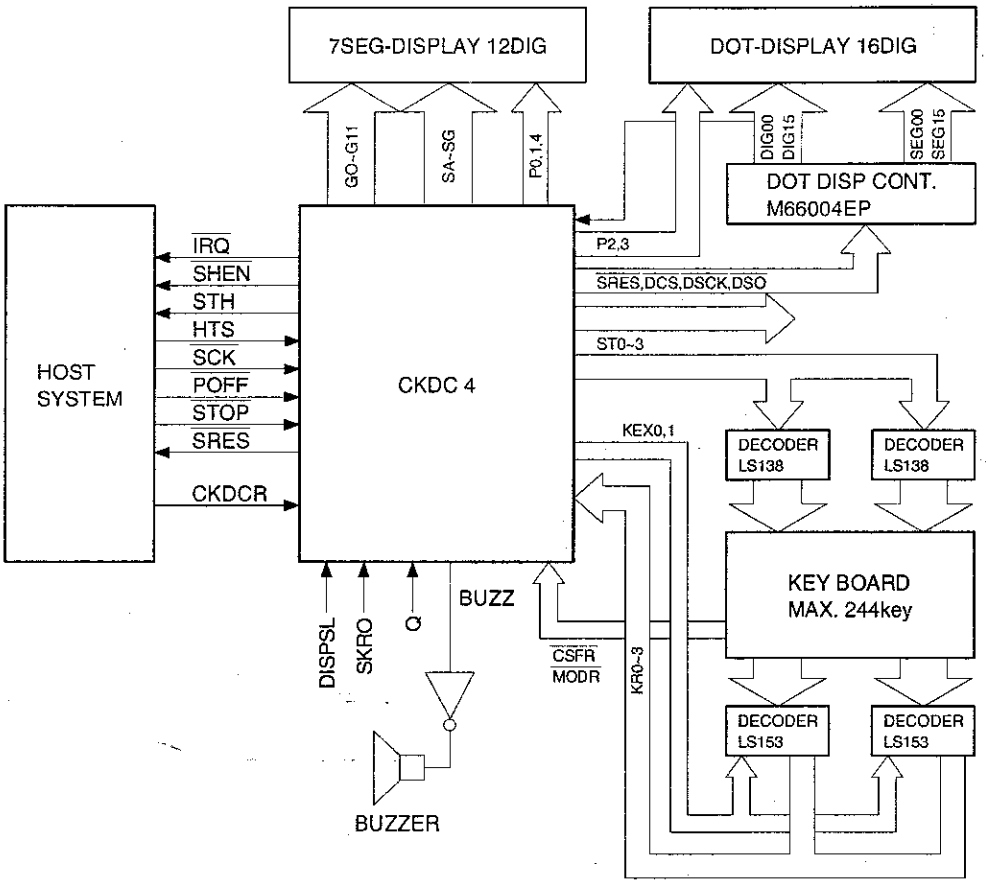


Fig. 2-5

2) Pin assignment

Pin No.	Port	I/O	RESET State	Signal name	I/O	Notes	PULL-UP -DOWN
1	$R0_1$	I/O	H-Z	SB	O	DB4 : SEG-B	PULL-DOWN
2	$R0_2$	I/O	H-Z	SC	O	DB4 : SEG-C	PULL-DOWN
3	$R0_3$	I/O	H-Z	SD	O	DB4 : SEG-D	PULL-DOWN
4	$R1_0$	I/O	H-Z	SF	O	DB4 : SEG-E	PULL-DOWN
5	$R1_1$	I/O	H-Z	SE	O	DB4 : SEG-F	PULL-DOWN
6	$R1_2$	I/O	H-Z	SG	O	DB4 : SEG-G	PULL-DOWN
7	$R1_3$	I/O	H-Z	P4	O	DB7 : 7SEG COM	PULL-DOWN
8	$R2_0$	I/O	H-Z	P0	O	DB2 : DOT DP	PULL-DOWN
9	$R2_1$	I/O	H-Z	P1	O	DB3 : DOT COM	PULL-DOWN
10	$R2_2$	I/O	H-Z	P2	O	DB5 : 7SEG DP	PULL-DOWN
11	$R2_3$	I/O	H-Z	P3	O	DB5 : 7SEG ID	PULL-DOWN
12	RA_0	I	I	$\overline{MODR}$	I	MODE RETURN	PULL-UP
13	RA_1	I	I	$\overline{CFSR}$	I	CLEARK, FEED, SWITCH RETURN	PULL-UP
14	$R3_0$	I/O	H-Z	KEX0	O	KEY EXCHANGE0	
15	$R3_1$	I/O	H-Z	KEX1	O	KEY EXCHANGE1	
16	$R3_2$	I/O	H-Z	RQ	O	INPUT Q	
17	$R3_3$	I/O	H-Z	SKR0	O	kEY SELECTO	
18	$R5_0$	I/O	I	ST0	O	KEY SCAN ST0	
19	$R5_1$	I/O	I	ST1	O	KEY SCAN ST1	
20	$R5_2$	I/O	I	ST2	O	KEY SCAN ST2	
21	$R5_3$	I/O	I	ST3	O	KEY SCAN ST3	
22	$R6_0$/INT0	I/O	I	$\overline{POFF}$	I	P-OFF	
23	$R6_1$/INT1	I/O	I	$\overline{STOP}$	I	STOP	PULL-UP
24	$R6_2$/INT2	I/O	I	$\overline{DDIG}$	O	DOT DISPLAY DIGIT INPUT	
25	$R6_3$/INT3	I/O	I	$\overline{DCS}$	O	DOT DISPLAY CONT./CS	
26	Vcc					Power supply	
27	$R4_0$/SCK	I/O	I	$\overline{SCK}$	I	SCK	
28	$R4_1$/SI	I/O	I	HTS	I	HTS	
29	$R4_2$/SO	I/O	I	STH	O	STH	
30	$R4_3$/PWM	I/O	I	SDISP	I	DIST SELECT	
31	$R7_0$/BUZZ	I/O	I	BUZZ	O	BUZZER	
32	$R7_1$/SCK2	I/O	I	$\overline{DSCK}$	O	DOT DISP CONT. SCK	
33	$R7_2$/SI2	I/O	I	$\overline{SRES}$	O	SYSTEM RESET	PULL-DOWN
34	$R7_3$/SO2	I/O	O	DSO	O	DOT DISP CONT. SO	
35	$R8_0$	I/O	O	$\overline{SHEN}$	O	$\overline{SHEN}$	
36	$R8_1$	I/O	O	$\overline{IRQ}$	O	$\overline{IRQ}$	
37	$R9_0$	I	I	KR0	I	KEY RETURN 0	
38	$R9_1$	I	I	KR1	I	KEY RETURN 1	
39	$R9_2$	I	I	KR2	I	KEY RETURN 2	
40	$R9_3$	I	I	KR3	I	KEY RETURN 3	
41	RESET					CKDC IV RESET	
42	OSC2						
43	OSC1						
44	GND					GND	
45	CL1						
46	CL2						
47	TEST	I	I	+5V		5V	
48	D0	I/O	H-Z	G0	O	7 SEG DIG 0	PULL-DOWN
49	D1	I/O	H-Z	G1	O	7 SEG DIG 1	PULL-DOWN
50	D2	I/O	H-Z	G2	O	7 SEG DIG 2	PULL-DOWN
51	D3	I/O	H-Z	G3	I	7 SEG DIG 3	PULL-DOWN
52	D4	I/O	H-Z	G4	O	7 SEG DIG 4	PULL-DOWN
53	D5	I/O	H-Z	G5	O	7 SEG DIG 5	PULL-DOWN
54	D6	I/O	H-Z	G6	O	7 SEG DIG 6	PULL-DOWN
55	D7	I/O	H-Z	G7	O	7 SEG DIG 7	PULL-DOWN
56	D8	I/O	H-Z	G8	O	7 SEG DIG 8	PULL-DOWN
57	D9	I/O	H-Z	G9	O	7 SEG DIG 9	PULL-DOWN
58	D10	I/O	H-Z	G10	O	7 SEG DIG 10	PULL-DOWN
59	D11	I/O	H-Z	G11	O	7 SEG DIG 11	
60	D12	I/O	H-Z	PO0	O		
61	D13	I/O	H-Z	PO10	O		
62	D14	I/O	H-Z	PO2	O		
63	D15	I/O	H-Z	PO3	O		
64	$R0_0$	I/O	H-Z	SA	O	DB4 : SEG-A	PULL-DOWN

NOTE 3: Pull-up/down in the table indicates that the lines concerned require external pull-up/down resistance.

3. Clock generator

1) CPU (HD6415108FX)

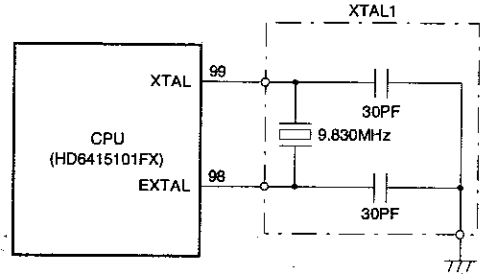


Fig. 3-1

Basic clock is supplied from a 9.830MHz ceramic oscillator.
The CPU contains an oscillation circuit from which the basic clock is internally driven. If the CPU was not operating properly, the signal does not appear on this line in most cases.

2) HD404728A20FS CKDC-III oscillation circuit (Display-PWB)

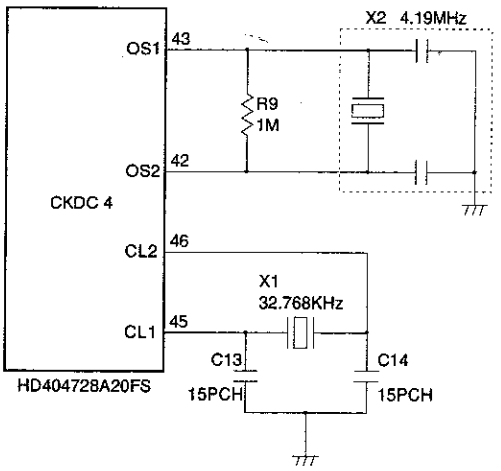


Fig. 3-2

Two oscillators are connected to the CKDC4.
The main clock X2 generates 4.19MHz which is used during power on.
When power is turned off, the CKDC4 goes into the standby mode and the main clock stops.
The sub-clock X1 generates 32.768KHz which is primarily used to update the internal RTC (real time clock). During the standby mode, it keeps oscillating to update the clock and monitoring the power recovery.

4. Reset (POFF) circuit

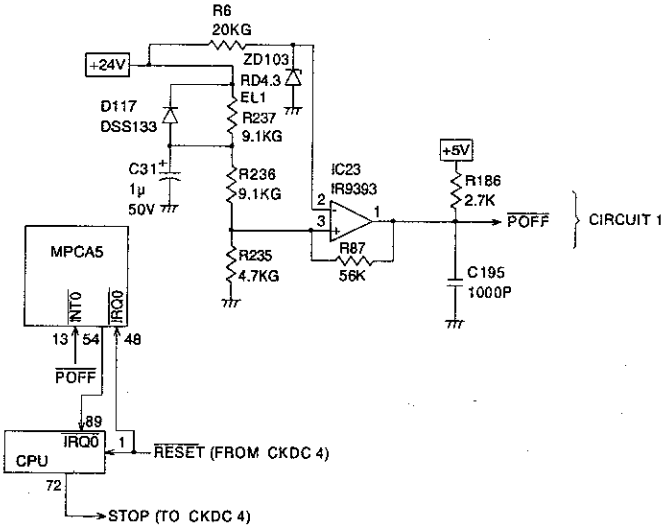


Fig. 4-1

In order to prevent memory loss at a time of power off and power supply failure of the ECR, the power supply condition is monitored at all times. When a power failure is met, the CPU suspends the execution of the current program and immediately executes the power-off program to save the data in the CPU registers in the external S-RAM with the signal $\overline{\text{STOP}}$ forced low to prepare for the power-off situation. The signal $\overline{\text{STOP}}$ is supplied to the CKDC4 as signal $\overline{\text{RESET}}$ to reset the devices.
This circuit monitors +24V supply voltage.
The voltage at the (–) pin of the comparator IR9393 is always maintained to 4.3V by means of the zener diode ZD103, while +24V supply voltage is divided through the resistors R237, R236, and R235, and is applied to the (+) pin. When normal +24V is in supply, 5.1V is supplied to the (+) pin, therefore, signal $\overline{\text{POFF}}$ is at a high level. When +24V supply voltage decreases due to a power off or any other reason, the voltage at the (+) pin also decreases. When +24V supply voltage drops, the voltage at the (+) pin drops below +4.3V, which causes $\overline{\text{POFF}}$ to go low, thus predicting the power-off situation.

5. Memory control

1) Memory map

① All range memory map

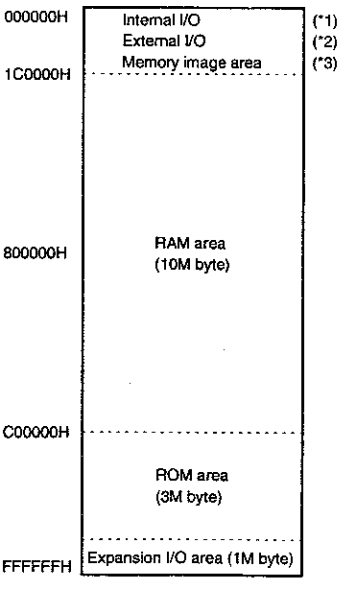


Fig. 5-1

(*1) "Internal I/O" means the registers in the H8/510.

(*2) "External I/O" means the base system I/O area to be addressed in page 0.

(*3) "Memory image area" means the lower 32KB of ROM area which is projected to 000000H ~ 007FFFH for allowing reset start and other vector addressing, or the lower 32KB of ROM area which is projected to 008000H ~ 00FE7FH for allowing 0 page addressing of work RAM area.

(*4) "Expansion I/O" means expansion I/O device area which isaddressed to area other than page 0.

② 0 page memory map

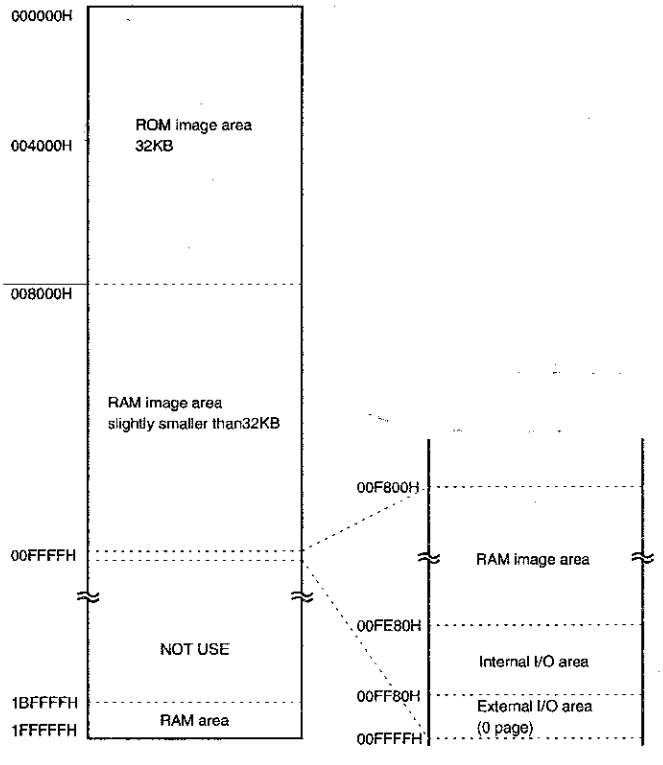


Fig. 5-2

- ROM image area: Image is formed in ROM area address C00000H C07FFFH. This area is identical to IPL ROM area which will beseparately developed.
- RAM image area: Image is formed in RAM area address 1D8000H1DFE7FH. (*Note)

  * Note: Image can be formed in lower 32KB of RAS2.

③ ROM area memory map

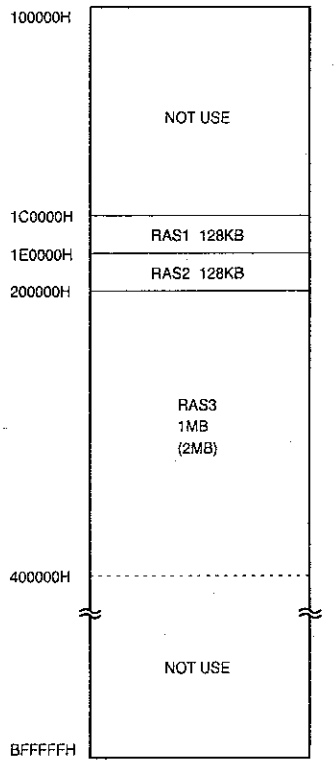


Fig. 5-3

These two decode signals decode 512KB space respectively and canbe used with max. 4MB ROM.

* Note: The lower 32KB of ROS1 signal is formed as OR of image area in 0page.

④ RAM area memory map

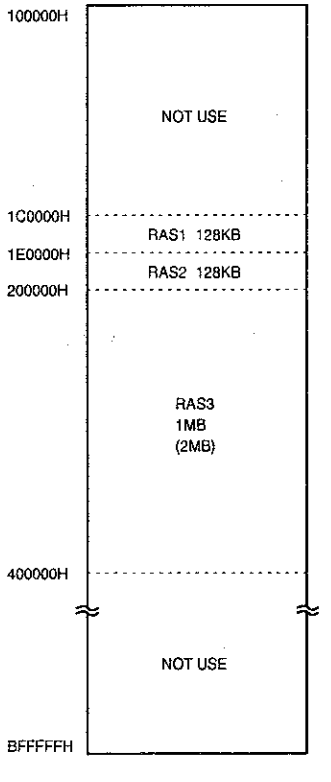


Fig. 5-4

In the three RAM chip select, the following address is decoded.

CS signal	Address
• RAS1	1C0000H~1DFFFFH (008000H~00FE7FH) ✳ Note
• RAS2	1E0000H~1FFFFFH (008000H~00FE7FH) ✳ Note
• RAS3	200000H~3FFFFFH

✳ Base signal is for 2M.

✳ Note: RAS1 signal is formed as OR in the image area of 0 page.j (Lower 32KB).
RAS2 signal is formed as OR in the image area of 0 page. (lower32KB).

⑤ I/O area memory map

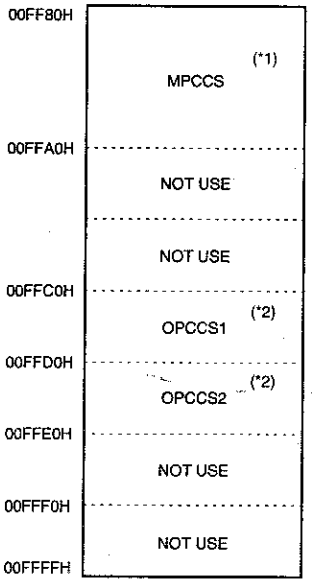


Fig. 5-5

✳ Note 1: MPCCS signal is the base signal for MPCA5 internal registerdecoding, and does not exist as an internal signal.

✳ Note 2: OPCCS1 and OPCCS2 signals are decoded in the OPC (optionperipheral controller) using the base signal OPTCS for optiondecoding. They does not exist as external signals.

2) Block diagram

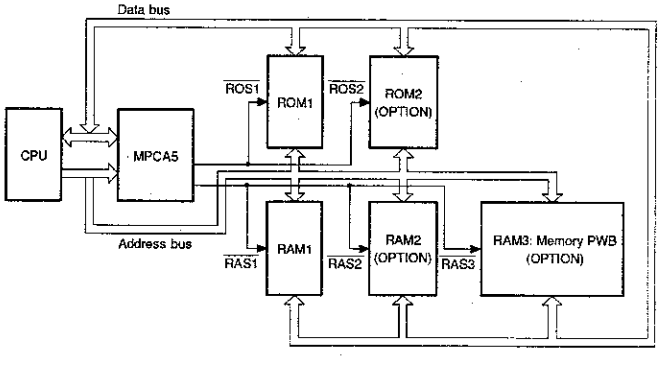


Fig. 5-6

① ROM control

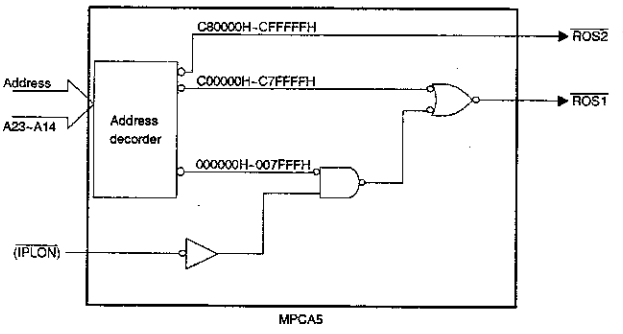


Fig. 5-7

IPLON: IPL board detection signal incorporated in the option slot. Note used in the ER-A650. (Not used)

Access is performed with two ROM chip select signals $\overline{ROS1}$ and $\overline{ROS2}$, which decode 512KB address area respectively to accessmax. 4MB ROM.

② RAM control

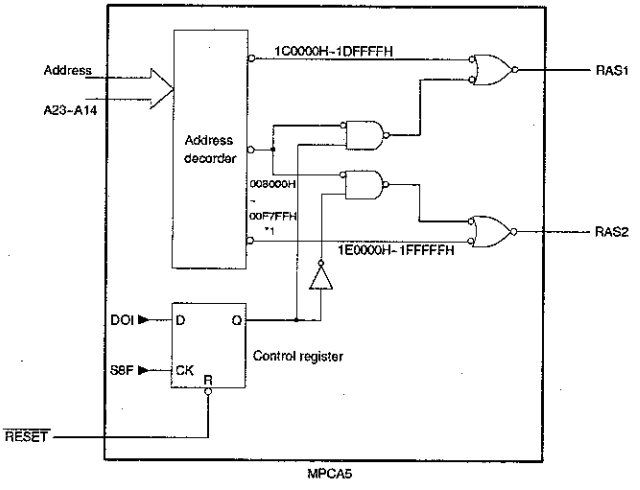


Fig. 5-8

Access is performed with two RAM chip select signals RAS1, RAS2 and RAS3. The control register in MPCA5 allows selection of pageimage memory area. (RAS1 is selected for initializing.)

✳ : For 0 page image area, selection between RAS1 and RAS2 can bemade with the control register. The 0 page control registerperforms initializing at the timing of no stack processimmediately after resetting.

6. SSP circuit

1) Block diagram

This is the circuit employed to do the Special Service Preset(SSP).

(Block diagram)

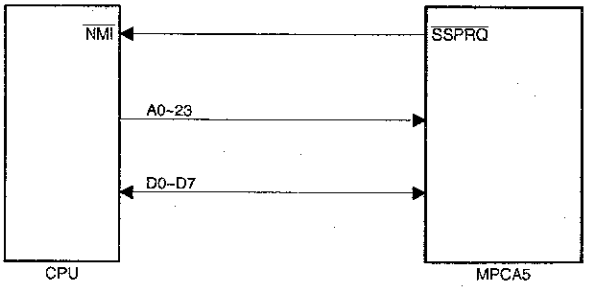


Fig. 6-1

(MPCA5 block diagram)

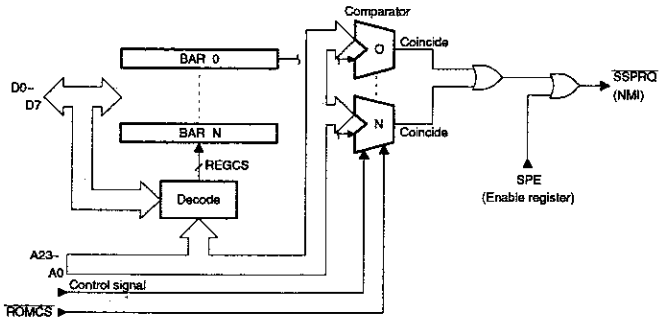


Fig. 6-2

As the address detection system, the brake address register comparison system is employed though the mapping system was employed in the conventional monitor RAM. The address registerlocated in MPCA is always compared with the system address bus to monitor and generate NMI signal at a synchronized timing and togo to NMI exception process.
In the exception process routine service routine, the entry address is checked to go to SSP sub routine.
Entry to the break address register (BAR) is performed through address FFFF00H or later decoded in MPCA5.

2) SSP register

The break address register (BAR) is accessed through direct address of FFFF00H~FFFFFFH. Entry number is 32 entry.

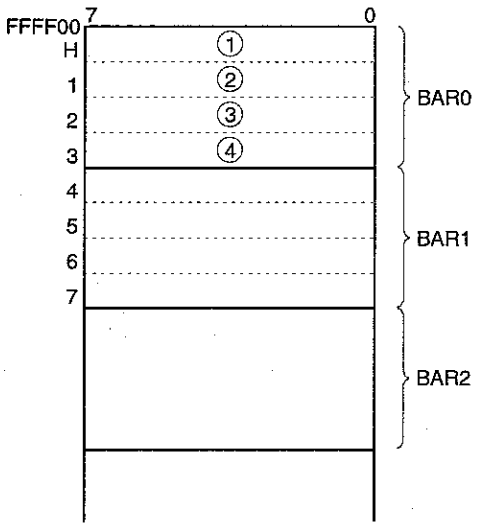
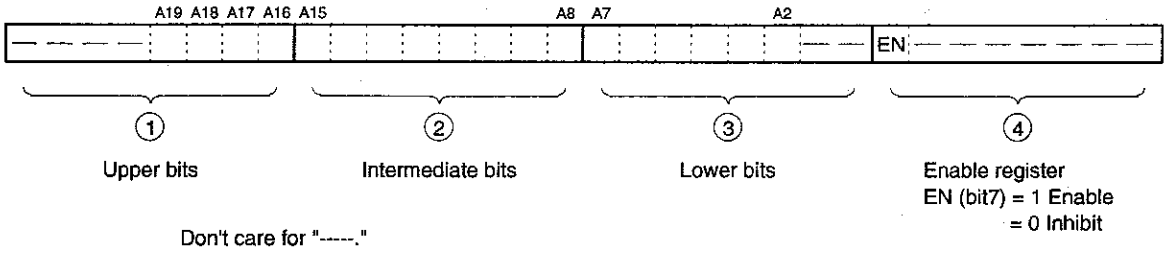


Fig. 6-3

Each BAR is composed of 4 byte address. Bit composition is as follows:



< BAR composition >

Fig. 6-4

④ is the enable register. The entry registers of the break address are assigned to ①, ②, and ③. Each bit of address corresponds to each bit position, writing to ①, ②, and ③ is performed without shifting. The corresponding area is 1MB space of ROS1 and ROS2.

3) SSP register access method

Access to SSP break address register is performed through the temporary register as shown below:

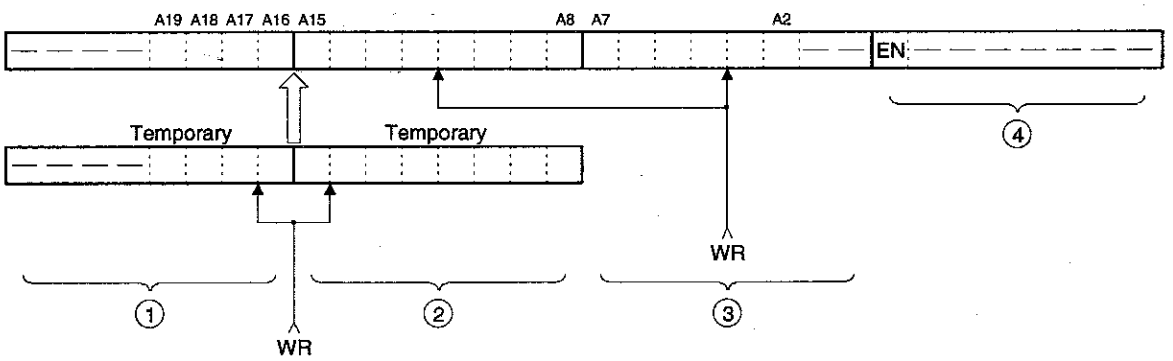


Fig. 6-5

Enable flags can be accessed individually.
Though enable register ④ can be accessed individually, writing to brake address registers ① and ② is performed at the same time as writing to brake address register ③ through the temporary register.
Therefore, set ① and ② to temporary, then write into ③ at last.
Since the temporary register is commonly used by BAR sets, thefollowing register setting is performed after completion ofsetting of each break address register.

③ SSP control method

Access to the enable register and the brake address register is only possible when writing to them from the CPU.

bit 7	6	5	4	3	2	1	0	
0	0	0	CMP4	CMP3	CMP2	CMP1	CMP0	(FFFFFFH)

Information on which brake register the SSP brake is detected in is read as binary data by reading address FFFFFFH (*1).
Used in an expanded register.
Normally is a reserve bit. Whenreading, fixed to 0.

If there are 32 break registers, binary expression is made with the above 5 bits, and 0th is "00000_B" and 31st is "11111_B."

When detected simultaneously by two or more break registers, onewith the smaller BAR number is read as binary data.

The brake signals (NMI) and the above detection data (CMP0~4) areheld until the above detection data are read. So read should bemade in the NMI sub routine. (Clear by FFFFFFH read.)

* 1: FFFFFFH is not fulldecoded. (FFFF00H~FFFFFFH). Therefore,unnecessary read access in parentheses should not be performed.

7. PRINTER control circuit

1)Block diagram

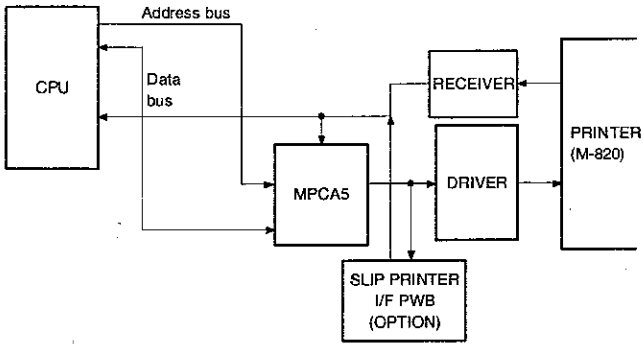


Fig. 7-1

2) General description of the printer controller

The M820 is used as the R/J printer of the body and the M240 is used as the slip printer. The printer mechanical timing control is made by the CPU through MPCA5.

3) Motor drive circuit

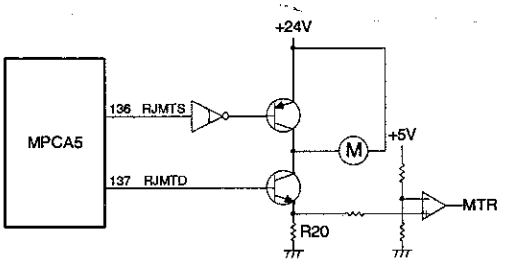
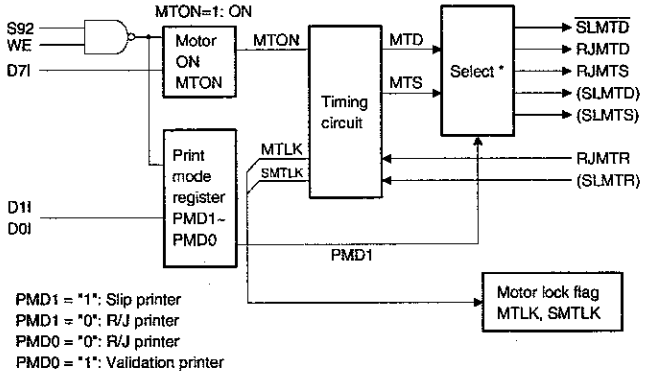


Fig. 7-2



MPCA5 internal circuit

Fig. 7-3

The printer motor ON/OFF control is performed with RJMTD as the drive signal and RJMTS as the brake signal. Motor lock detection is performed as follows:

Check by the hardware: The motor drive current flowing from the MTD transistor is checked across R20. When an overcurrent is detected, the MTR signal becomes HIGH to drive the MTS and MTD signals in the MPCA5 to HIGH impedance to stop conduction of the motor.

When the motor is stopped, the CPU timing pulse width is extended and the CPU judges it as motor lock.

CPU motor lock detection can be read out as internal register MTLK.

Lock can be released by writing dummy data into MTLK as well as by conventional hardware reset.

Check by the CPU: When timing pulse from the printer is not generated for more than the specified time, the CPU judges it as motor lock, the MTON is reset (To High) and the motor is stopped.

4) Printhead mechanism

With the timing plus (TS) from the motor, current is applied to the dot wire drive coil to print.

- Discussion is given here to explain how a single dot wire is driven.

① When current is applied to a coil, the actuator moves towards the arrowhead (a) as the steel core is magnetized. The actuator makes connection with the wire, and the wire pushed out towards the platen.

② As the wire hits the platen with the ink ribbon and paper in-between, a dot is then printed.

③ When current is removed from the coil, the actuator and the wire return to their home positions by means of the actuator spring and wire return spring.

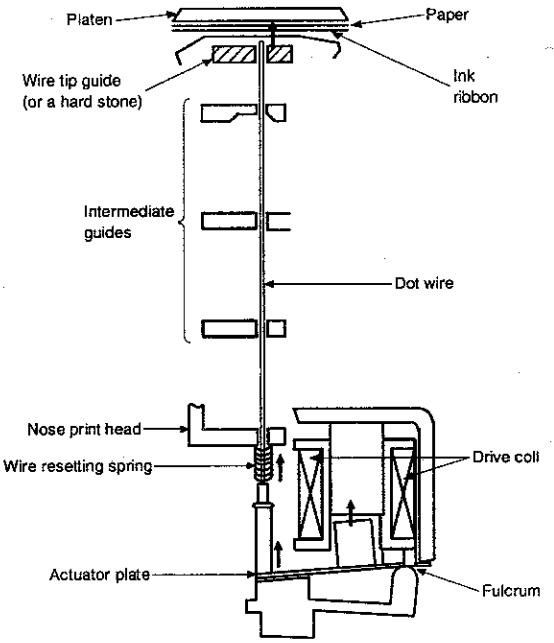
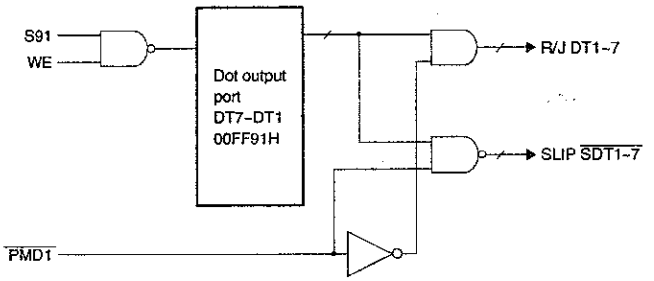


Fig. 7-4

5) Dot wire drive control circuit



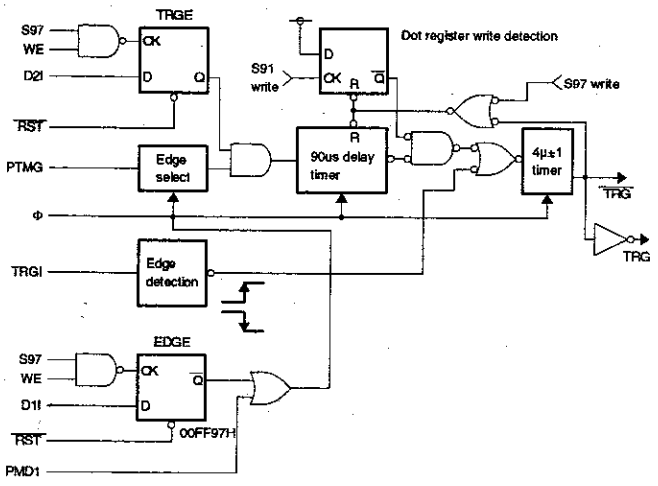
MPCA5 internal circuit

Fig. 7-5

When writing is made into address 00FF91H by the dot register inj MPCA5, dot wire drive signals DT1~DT7 are formed.

When $\overline{PMD1}$ is low, the R/J printer is selected.

6) Print trigger generating circuit



MPCA5 internal circuit
Fig. 7-6

- Automatic trigger mode selection register (TRGE)
  TRGE = 1: Automatic trigger generation
  TRGE = 0: Trigger is generated at change edge of OCRA matchoutput.
  (Reset initial value = 0)
- Timing pulse active edge select register (EDGE)
  EDGE = 0: Falling edge
  EDGE = 1: Rising edge
  (Reset initial value = 0)

7) Dot solenoid drivers (solenoid 1 - 7)

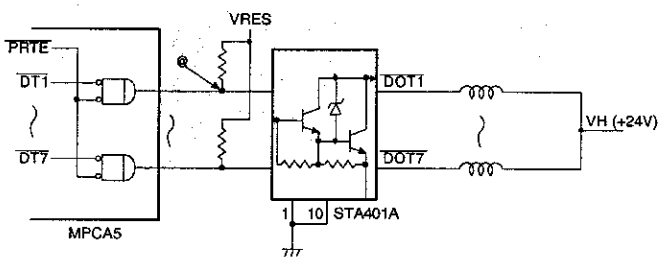


Fig. 7-7

Current to the dot solenoid is controlled in the following manner:

- VRES must be at a high level.
- At the same time $\overline{DTS1}$ is set low, $\overline{TRG}$ must be set low.
- $\overline{PRTE}$ is now set low. (MPCA5)
- PE must be set high level.
- The signal is turned high at point @, the magnet driver output is set low, and then VH flows through the magnet driver.
- The dot wire now protrudes to hit and print.

8) Sensor signal receive circuit

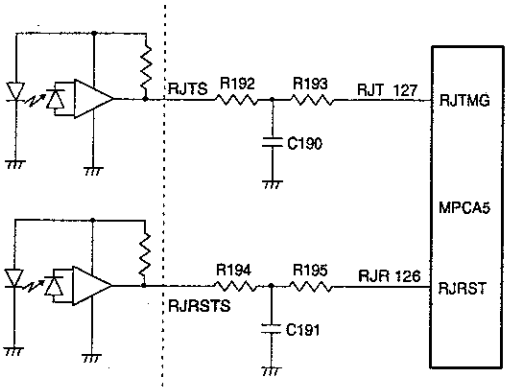
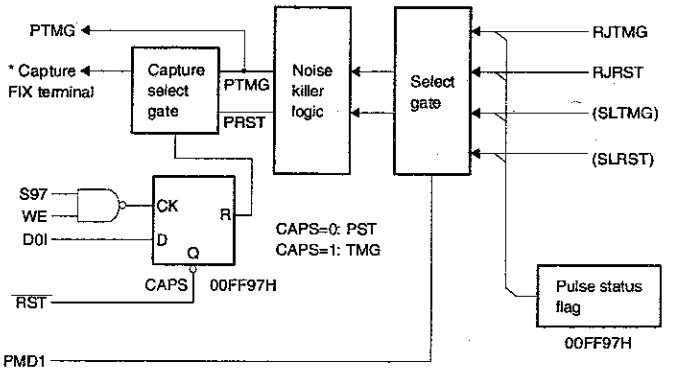


Fig. 7-8
MPCA5 internal circuit



** PRST/PTMG is in the same phase (non-reversion) of RJTMG/RJRST.

Fig. 7-9

The signal from the photocoupler within the printer is converted into TTL level and conveyed to the MPCA5.

9) Paper feed, stamp and cutter circuit

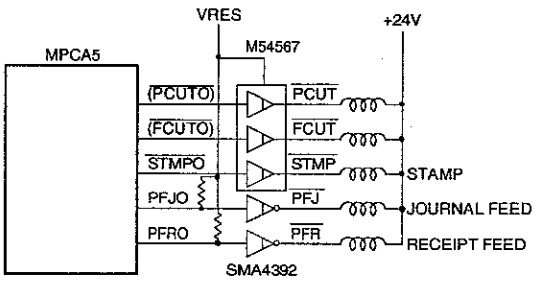


Fig. 7-10

The paper feed/stamp related signals issued from MPCA5 and pulled up by the VRES signal to prevent action when the power supply is not steady.

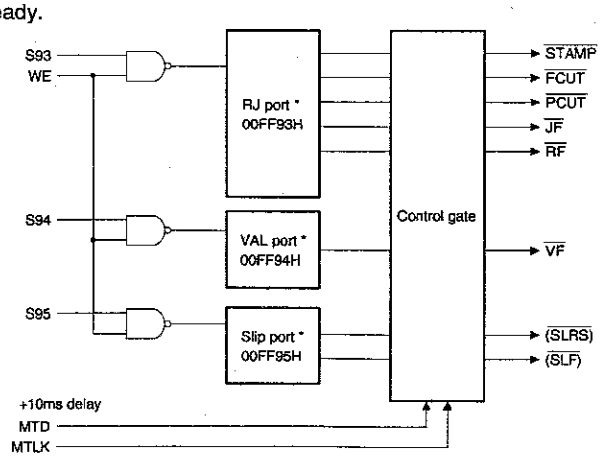


Fig. 7-11

Printer control signals are generated by writing each port address into the register address in PMCA5.

CAUTION

If fuse F1 should be blown, the dot head solenoid may be shorted. Be sure to check the head impedance and driver breakdown.

When fuse F1 is blown:

① Remove F1, and perform the service resetting. The set the mode switch to a position other than SRV and SRV' and turn off the power.

② Install fuse F1 (1.5A)and turn on the power.
If the fuse blows with the above operation, driver STA401A may be shorted.

③ Turn off the power.

④ Disconnect the printer cable from the printer. Measure impedance between the printer body connector pin 21 and the following pins:
18, 20, 24, 25, 28, 29, 30
The impedance must be 12.4 ~ 18Ω.
If impedance is outside the above range, the dot solenoid is bad. Replace the dot head unit.

8. Drawer drive circuit

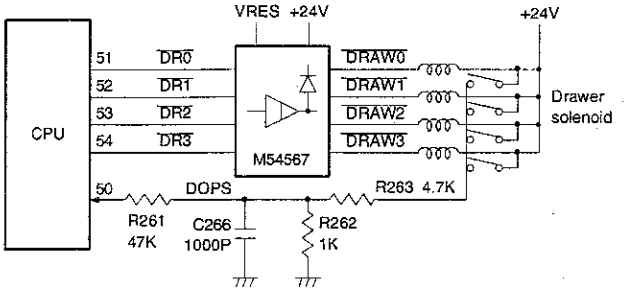
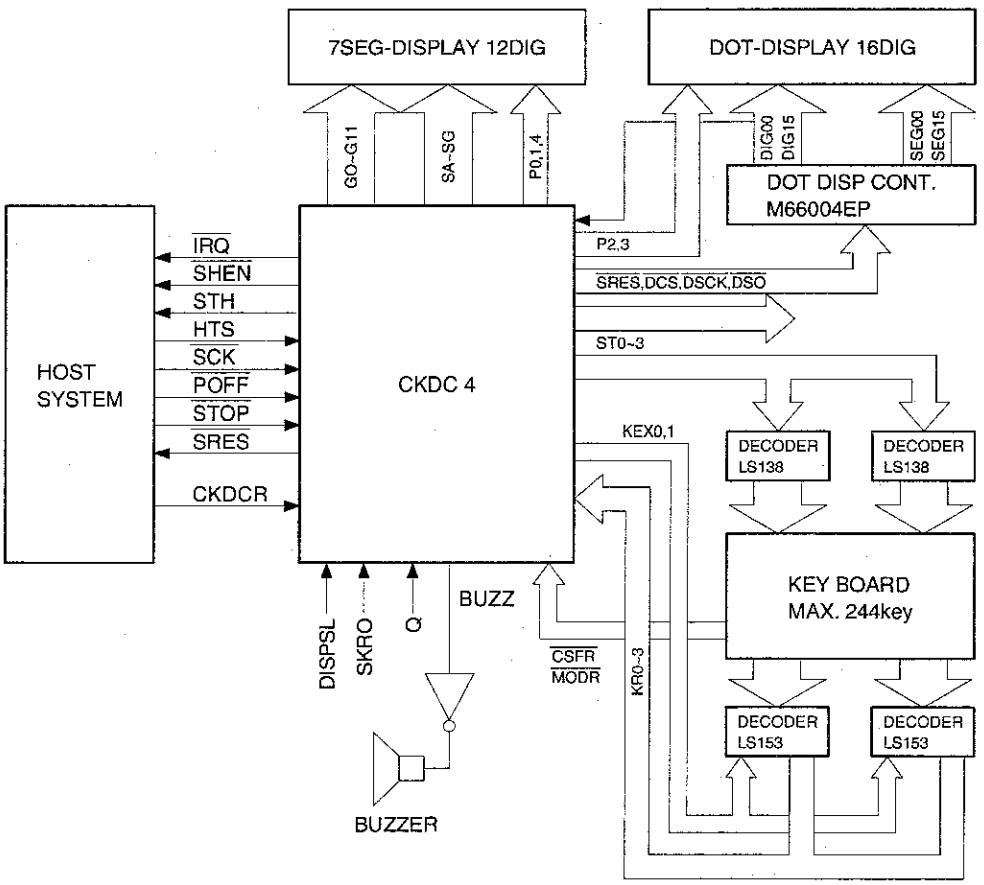


Fig. 8-1

The drawer is directly supported by the CPU. No action starts when the power supply is not steady as the output stage of the driver is pulled VP by VRES signal.
Drawer open and close is sensed with the microswitch provided in the drawer whose signal is level converted with R262 and R263 and directly read by the CPU.

9. Key, display, timer, buzzer controls

The keys, switches, displays, timer/calendar, and buzzer are controlled by the CKDC-4 on the display PWB.



Block diagram
Fig. 9-1

1) Power on/off sequence

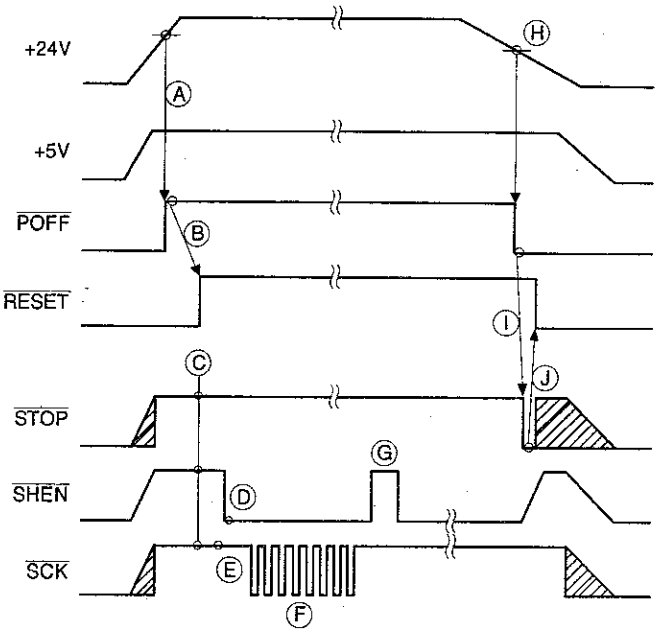


Fig. 9-2

Hatched area indicates logic unstable.

<At power on>

When +24V power rises, the signal $\overline{POFF}$ is forced high (A), by which time the +5V supply becomes stable. The CKDC-III monitors the state of $\overline{POFF}$ while updating the timer/calendar in the low power standby mode, and when the high state of $\overline{POFF}$ is detected, the system reset signal ($\overline{RESET}$) is set high (B), by which time the output lines $\overline{STOP}$ and $\overline{SCK}$ of the CPU and MPCA5 have been initialized to high, respectively (C). Thereafter, the CKDC-III sets $\overline{SHEN}$ active (low) (D) to notify the CPU of the command/data communication ready state.
One byte data/command can be transferred with eight $\overline{SCK}$ pulses (F). When one byte has been transferred with eight $\overline{SCK}$ pulses, the CKDC-III sets $\overline{SHEN}$ high to initiate internal processing. After completion of the internal processing, when the next byte transfer becomes ready, the CKDC-III sets $\overline{SHEN}$ back to a low state to wait for the next byte transfer (G).
Thereafter, the $\overline{SHEN}$ and $\overline{SCK}$ timing described above is repeated to carry on the communication.

<At power off>

When +24V power drops, $\overline{POFF}$ goes low (H).
A low on the $\overline{POFF}$ line causes a low level interrupt request which is sent the $\overline{IRQ0}$ pin of the CPU. Within a maximum of 10msec of the low level $\overline{IRQ0}$ input, the CPU performs software processing necessary for power-off, after which the $\overline{STOP}$ output is set low (I).
When $\overline{STOP}$ goes low, the CKDC-III sets $\overline{RESET}$ low to reset the whole system (J). And, the +5V supply is held at 4.75V or higher voltage, after which the voltage drops to a level that the logic circuit does not operate.

2) Key and switch scanning

Strobes ST0 ~ ST3 are decoded on the keyboard by two 74LS138 3-to-8 decoders to generate 16 strobe signals of $\overline{S15}$ ~ $\overline{S0}$.
The key matrix consists of 16 strobe lines and 16 returns lines of $\overline{KR0A}$, $\overline{KR1A}$, $\overline{KR2A}$, $\overline{KR3A}$, $\overline{KR0B}$, $\overline{KR1B}$, $\overline{KR2B}$, and $\overline{KR3B}$.
To minimize interfacing lines between the CKDCIII and the keyboard unit, two multiplexers (74HC153) are used to multiplex signals by the timing controlled with the signals KEX0 and KEX1 which are sent to the CKDCIII on the return lines of $\overline{KR0}$ ~ $\overline{KR3}$.

Timing ST

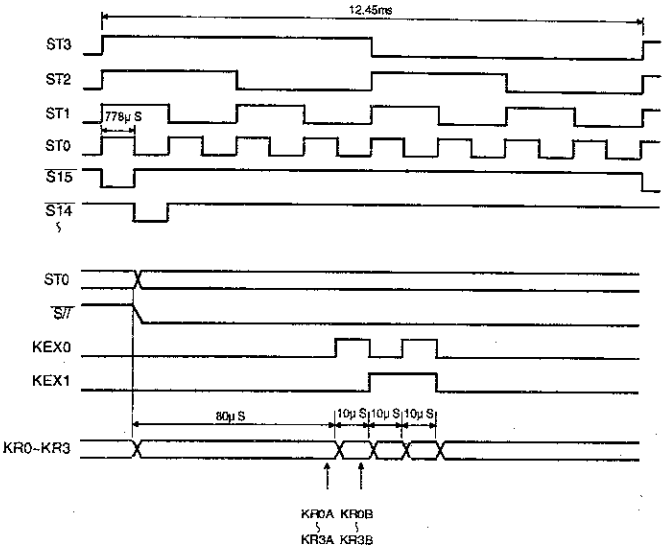


Fig. 9-3

The mode switch in provided with a special return line $\overline{MODR}$, apart from the above return lines.
In the same manner, the clerk, paper feed key (J/R), and receipt on/off switches use $\overline{CFSR}$ as the return line.

3) DISPLAY CONTROL

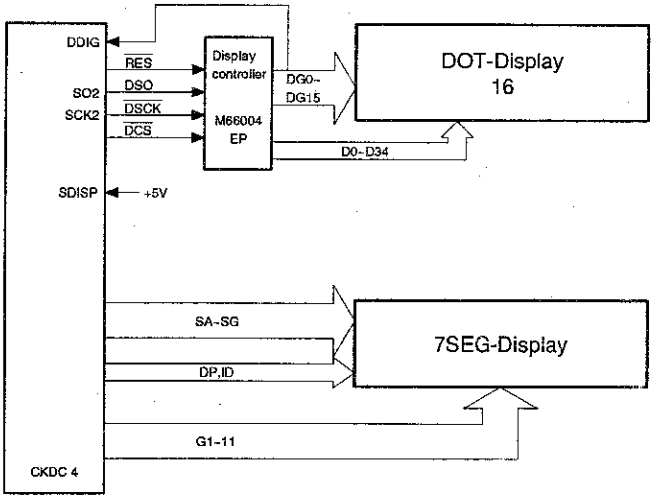


Fig. 9-4

CKDC4 directly drives the 7-segment display unit and the dot display is driven via M66004FP.

<7-segment display>

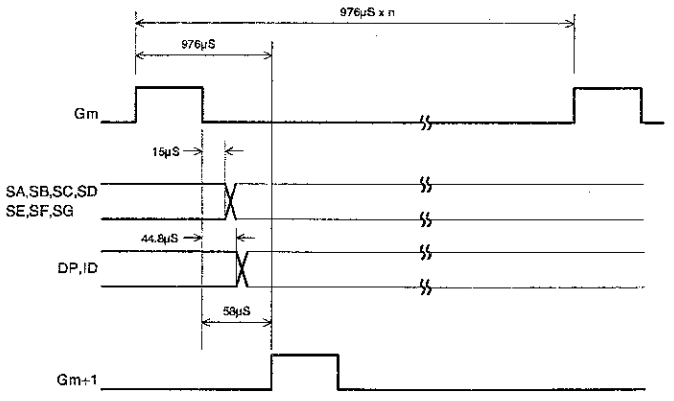


Fig. 9-5

<Dot display>

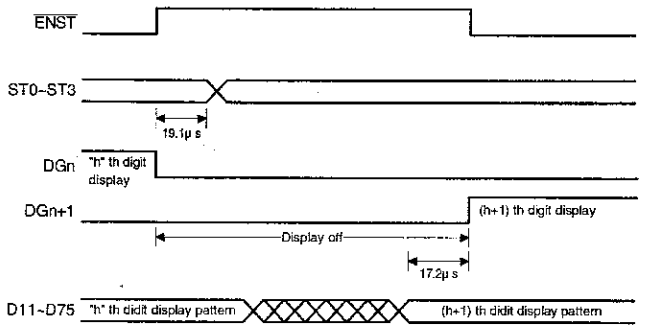


Fig. 9-6

IMPORTANT:

The CKDCIII lines are not high voltage resistive ports. Damage may occur to the CKDC4 if lines are ahorted carelessly when using oscilloscope probes.

- Dot matrix tube
  A 4-bit binary output signals (ST0-ST3) from CDKC4 are converted into the digit drive signal (DG0-DG15) in the M66004FP.

<Dot display control>

The CKDC4 controls the character segment (5 x 7) and the indicator of the dot display by using the controller (M66004FP) for dot display control.

① M66004PF/Dot display control signal

Signal name	Contents	Pin/Remark
DSO	Serial data output signal for M66004FP	C-MOS pin
$\overline{DSCK}$	Serial shift clock output signal for M66004FP	C-MOS pin. Requires to be pulled up
$\overline{DCS}$	Chip select output signal for M66004FP	C-MOS pin

D0	D1	D2	D3	D4
D5	D6	D7	D8	D9
D10	D11	D12	D13	D14
D15	D16	D17	D18	D19
D20	D21	D22	D23	D24
D25	D26	D27	D28	D29
D30	D31	D32	D33	D34

10. Power supply circuit

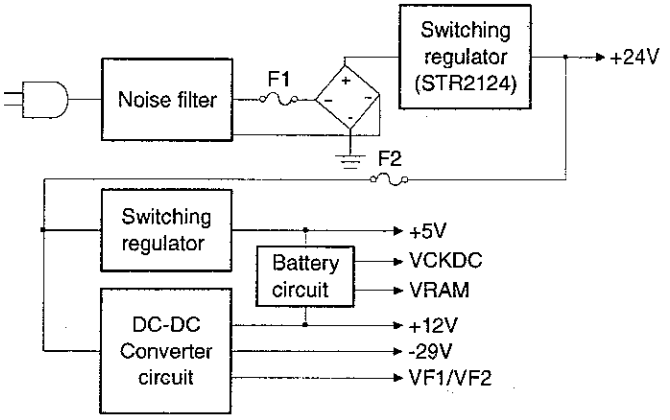


Fig. 10-1

+24V: Printer, solenoid power
+5V: VCC (Logic power)
+12V: Battery charge, IN-LINE driver power
–29V: Display tube power
VF1, VF2: Display tube power (AC)
VRAM: Battery back-uped power
VCKDC: CKDC III Back-up power

For the DC-DC converter, refer to section 8 of cash register Basic manual.

11. Switching regulator circuit

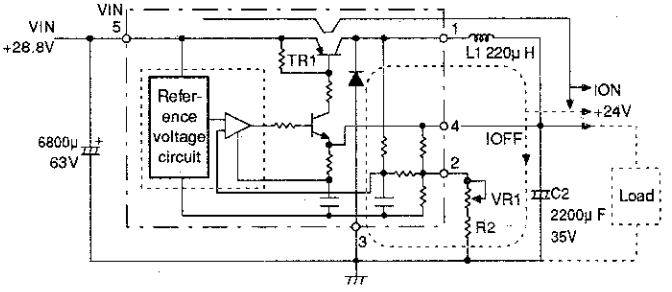


Fig. 11-1

By switching VIN (+28.8V) by the transistor TR1 within the STR2124, DC+24V supply is obtained through the LC network. Stable +24V is obtained by controlling on/off duty of TR1.

ION: Current when TR1 is on.
IOFF: Current when TR1 is off.

CHAPTER 5. TEST FUNCTION

1. General

1) This diagnostic program has been developed for diagnosing machine functions in the field. The program is contained with in the ER-A650.
The diagnostic program is stored in the external ROM which will be executed by the CPU (H8/510) which requires the following diagnostic operations:

   a) Proper power supply voltages are mandatory for logic circuits (+5V, VRAM, VCKDC, POFF, 12V, +24V).

   b) CPU input/output pins, CPU internal logic, CKDC4, MPCA5, TPRC, address decoder, address bus, data bus, and common ROM/RAM must be working properly.

2. Operational procedure

To start the diagnostic program, you must enter the following command.
3-digit test item number → [TL] key in the SRV mode.
The key assignment must be properly set and a part for ROM and RAM must be operating properly to go into this mode because the control jumps to the program area in the SRV mode. A master reset must be performed before operating the ECR for the first time. After any option is installed, a program reset is required. When the master reset or program reset is performed, be sure to check the printout on the journal paper.

Master reset:	Turn power on in the SRV' mode and change it to the SRV mode with the [JF] key pressed.
Journal print:	MASTER RESET ***
Program reset:	Turn power on in the SRV' mode and change it to the SRV mode.
Journal print:	PRG. RESET ***

3. Test command list

With the SRV mode and the following command entry, the test starts.

Code	Description
100	Display test-1
101	Key, clerk, and switch position code display
102	R/J printer test
103	Slip printer test
104	Keyboard test
105	Mode switch test
106	Validation sensor and near end sensor test
107	BOF, TOF and IFV test
108	Calendar oscillator test
109	SSP test
110	Drawer-1 open and sensor test
111	Drawer-2 open and sensor test
112	Drawer-3 open and sensor test
113	Drawer-4 open and sensor test
116	Display test-2
117	SIO test-1
120	Standard RAM test
130	Standard ROM test
150	R/J printer dot pulse width adjustment
200 ~ 206	Option RAM chip test
300 ~ 306	Option RAM address test
400	Option ROM test

[1] Display test-1

① Key operation
100 → [TL]

② Functional description
The following is displayed:

DOT DISPLAY : 0 1 2 3 4 5 6 7 8 9 ; A a B b C

7SEG DISPLAY : 0. 1. 2. 3. 4. 5. 6. 7. 8. 9. -.

POP-UP DISPLAY : 4. 5. 6. 7. 8. 9. -.

③ Check the following items:

   a) Check for proper activation of display elements.

   b) Check for blur, uneven illumination, and partial omission.

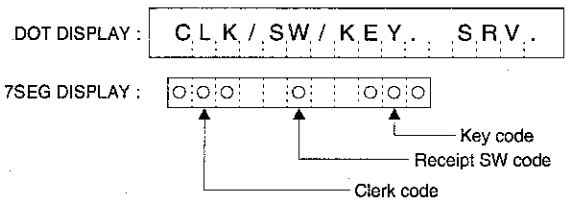
④ Test termination
Press any key. The test terminates with the test and message printed.

100
Test termination print

[2] Key, cashier, and switch position code display

① Key operation
101 → [TL]

② Functional description



Key, clerk, and receipt switch codes are displayed.

③ Check the following items:
Change key and switch positions for proper display activation.

Clerk code:	One hole clerk key or WMF key 000 (off state) 001 (Clerk 1) 002 (Clerk 2) ~ 255 (Clerk 255)
Receipt switch code:	0 (on state) 1 (off state)
Key code:	--- (simultaneous two key depression, invalid entry) 001 ~ 158

NOTE: Refer to JOB#104, key soft code, for the key code. (Fig. 3-2.)

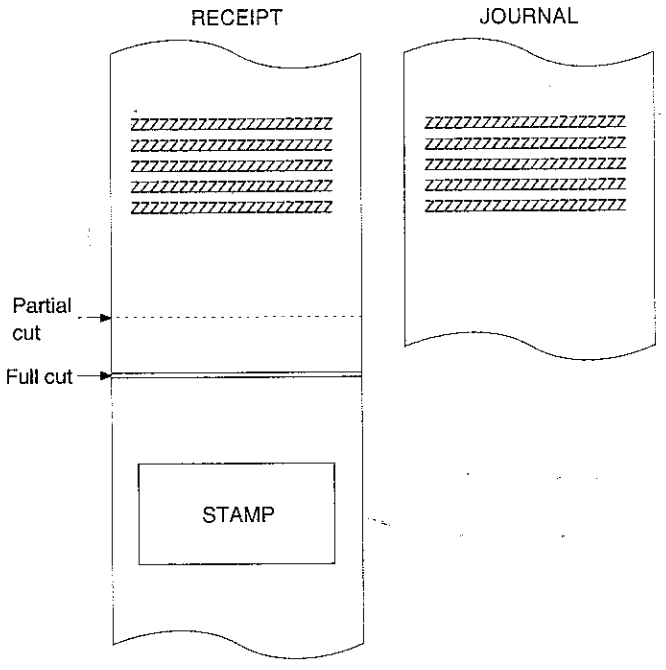
④ Test termination
Change the MODE switch position other than SRV position to terminate the test. The test termination message is printed.

101
Test termination print

[3] R/J printer test

① Key operation
102 → TL

② Content
Five lines of "Z" characters are printed as follows on the receipt and the journal regardless of receipt (ON/OFF) switch setting.



③ Check content

1. Check that the slanted lines of "Z" characters are clearly printed.
2. Check that the characters are printed at a uniform density.
3. Check the paper feed operation and the logo print.
4. Check partial cut and full cut.

④ Termination
This check is terminated automatically.
The termination print is not performed.

[4] Slip printer test

① Key operation
As slip must be set on the print table.
103 → TL

② Functional description
Regardless of paper setting, 35 digits of "Z" are printed on five lines, then the printer stops after releasing the paper.

③ Check the following items:
a) Print starting position must line up in the same column.
b) Check the print quality.
c) Make sure that the paper is released at the terminattion.

<Print sample>

ZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZ
ZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZ
ZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZ
ZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZ
ZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZ

④ Test termination
The test terminates automatically. If the paper release lever is not up, perform JOB#107 BTF, IFV test to release the paper.

If the ER-31SP (printer and I/F PWB unit) is not connected when performing this test, the following error display is made.
To cancel the error state, press any key or shift the mode key position, and the R/J printer will print the error print, terminating the operation.

Error display:

DOT DISPLAY : S L I P I / F E R R S R V .

Error print:

R/J printer:	E – – – – –	103

[5] Keyboard test

① Key operation
104 → TL

② Functional description
Key actions of the standard version ER-A650 are tested.
Press keys on the keyboard in the order given in the figure 3-1. If the test has been successful, the test terminates with the printout showing correct action of every key. If an error has occured in the course of a test, an error message will be printed immediately upon occurrence of the error. When the test is interrupted, the normal test termination printout is not produced.

③ Check the termination print

④ Test termination
When the last key (see next page) is depressed, the test terminates with the termination printout.

	104		E – – ✻✻✻	104
Test termination print			Error print	

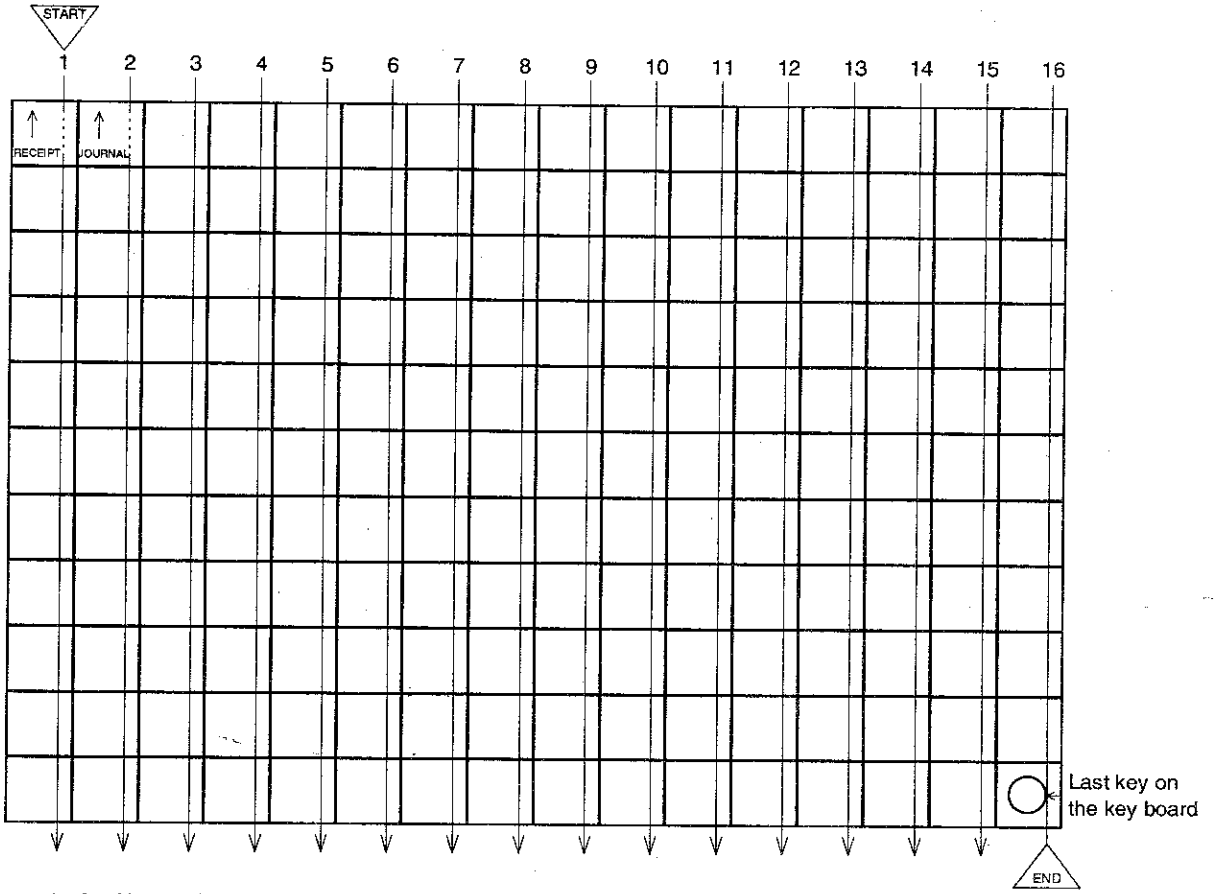
✻✻✻: Key code that caused the error

(Additional description on the program specifications)
When an error occurs during check, the operation is not terminated and the key to be checked on the key table is not incremented and is kept at standby state for being checked.
To terminate compulsorily, press the END key (at the right bottom). In this case also, the error print is not made.
The display specification is as follows:

DOT DISPLAY : K E Y B O A R D S R V .

7SEG DISPLAY : 0 0 0
KEY CODE

[ER-A650]



Note: The receipt feed key and the journal feed key are excluded from this test.

Fig. 3-1: TEST SEQUENSE

↑ RECEIPT	↑ JOURNAL	028	038	048	058	068	078	088	098	108	118	128	138	148	158
009	018	027	037	047	057	067	077	087	097	107	117	127	137	147	157
008	017	026	036	046	056	066	076	086	096	106	116	126	136	146	156
007	016	025	035	045	055	065	075	085	095	105	115	125	135	145	155
006	015	024	034	044	054	064	074	084	094	104	114	124	134	144	154
005	014	023	033	043	053	063	073	083	093	103	113	123	133	143	153
004	013	022	032	042	052	062	072	082	092	102	112	122	132	142	152
003	012	021	031	041	051	061	071	081	091	101	111	121	131	141	151
002	011	020	030	040	050	060	070	080	090	100	110	120	130	140	150
001	010	019	029	039	049	059	069	079	089	099	109	119	129	139	149

Fig. 3-2: KEY CODE TABLE

[5] Mode switch test

① Key operation
105 → TL

② Functional description
This test is applicable for checking of the MODE switch. The MODE switch must be changed as described below to do the test.
Initial state mode: SRV mode
Mode check
Change the MODE switch position in the order given below starting from the SRV position.

DOT DISPLAY : MODE SW TEST SRV.

7SEG DISPLAY : X X: 0~7,E,F

Mode: SRV PGM2 PGM1 ⏻ OP X/Z REG
X : 0 1 2 (E) 3 4

SRV X2/Z2 X1/Z1 MGR
0 7 6 5

(X: E-intermediate position, F-multiple errors)

When the mode key settings in the sequence other than specified is met or when any key pushed, the program execution will terminate immediately upon occurrence, with the error printout produced, except for the mode switch in the middle position. To avoid this, the mode switch must be rotated correctly. Because nothing is interrogated until the mode key returns to the SRV position once after the switch has turned to the "X2/Z2" positions, it needs not to be rotated slowly.

③ Check the following items:
Check to see if the following are displayed and that the termination print is produced

④ Test termination
When the test has been completed according to the given procedure, the test automatically terminates with the termination message printed. To terminate the test in the middle of an operation, merely depress any key, then, the test will terminate with the error message printed. When an error was encountered, the test automatically terminates with the error message printed on the printer.

105
Test termination print

E----- 105
Error print (any key depression)

[6] Validation sensor and near end sensor test

The validation sensor and the near end sensor are optional units.

① Key operation
106 → TL

② Functional description
State of the validation and near end sensor is sensed and displayed.

③ Check the following items:
On and off actions of the validation and near end sensors are tested and their results are displayed.
ON/OFF check is performed for VDS and NES and the display is checked.

DOT DISPLAY : RJ SENSOR SRV.

7SEG DISPLAY : x y z

x: State of the VDSR sensor
y: State of the VDSJ sensor
z: State of the NES sensor

Display	X/Y/Z	Description
VDSR	O	Validation sensor (JOURNAL) not detected
	C	Validation sensor (JOURNAL) detected
VDSJ	O	Validation sensor (RECEIPT) not detected
	C	Validation sensor (RECEIPT) detected
NES	O	Journal side paper roll near end detected.
	C	Journal side paper roll near end not detected.

NOTE: "C" is always displayed when no sensor is used.

④ Test termination
Any key depression causes the test to terminate with the termination message on printout.

106
Test termination print

[7] BOF, TOF and IFV test

① Key operation
107 → TL

② Functional description
After releasing the paper, the state of BOF, TOF, and IFV sensor are sensed and displayed.

③ Check the following items:
BOF, TOF: Check the paper set condition.
IFV: Check the connection of the ER-31SP slip printer and slip printer interface.
Check the on and off actions.

DOT DISPLAY : SLIP SENSOR SRV.

7SEG DISPLAY : x y z

x: State of IFV
y: State of the BOF sensor
z: State of the TOF sensor

Display	x/y	Description
IFV	O	Slip printer or slip printer interface not in connection
	C	Slip printer or slip printer interface not in connection
BOF	O	Slip paper not detected
	C	Slip paper detected
TOF	O	Slip paper not detected
	C	Slip paper detected

④ Test termination
Any key depression terminates the test with the termination print.

107
Test termination print

Note 1: Before performing this test, connect the slip printer and the slip printer I/F. If not, "SLIP I/F ERR" occurs.
Note 2: Before turning on/off the connector for IFV checking, be sure to set the mode to other than SRV and turn off the power.

[8] Calendar oscillator test

① Key operation
108 → TL
Functional description
This program is used to test the calendar oscillator function.

DOT DISPLAY : T I M E R C H E C K S R V .

7SEG DISPLAY : * * - * *

-: Present time

② Check the following items:
i) Testing blinking "–". (500ms ON and OFF)

③ Test termination
Any key depression terminates the test with the termination print.

108
Test termination print

[9] SSP test

① Key operation
109 → TL

② Functional description
If an SSP is programmed, its contents are automatically checked and the result is printed.

③ Check the following items:
Check printing of the termination message.

④ Test termination
The test terminates automatically after printing the termination print.

109 | E----- 109 | F----- 109

Normal end print | Error print | SSP table full print (NOTE)

Note: In this SSP check, set the data for check in the empty area of SSP entry REG and erase the data for check after completion of check. Therefore, SSP setting before check is not cleared. If, therefore, there is no SSP entry REG remained for SSP check, F-print (SSP entry register full print) is performed to terminate the program without check.

[10] Drawer open sensor test

① Key operation
110~113 → TL

② Functional description
The drawer indicated by the job number is opened to check the proper action.
Drawer opened: O indicated
Drawer closed: C indicated
110: Drawer-1: Option drawer
111: Drawer-2: Remote drawer
112: Drawer-3: Remote drawer
113: Drawer-4: Remote drawer

DOT DISPLAY : D R A W E R x S R V .

x: 1~4

7SEG DISPLAY : y

y: O= Drawer opened
C= Drawer closed

③ Check the following items:
a) Check opening of the specified drawer.
b) Check the display indication when the drawer is open and close.

④ Any key depression terminates the test with the termination print.

11X
Test termination print | X: 0~3

[11] Display test-2

① Key operation
116 → TL

② Functional description
The display CGs in CKDC4 are checked. The 256 CGs are grouped into 32 blocks and each 8 characters is displayed on the dot display.
The check start with CG code 00H - 07H, and the following blocks are sequentially displayed when any key is pressed.

DOT DISPLAY : x y : O O O O O O O O S R V .

O: CG display position
xy: The initial code of each block is displayed in hexadecimal (For example, A0, B8)

③ Check the following items.
1. Check that the display is normal.
2. Check that there is no blur, defects, and unevenness.

④ Test termination
To terminate the test, set the mode key to any mode other than SRV mode.

116
Test termination print

[12] SIO test-1

① Key operation
117 → TL

② Functional description
The following two kinds of loopback tests are carried out using the special service tool (UKOG-6704RCZZ) to check the trans and receive data, ready, and not ready signals.
Test-1: Checks ER – DR, RS-CD and RR-CS
Test-2: Checks TXD – RXD

③ Check the following items:
Successful test results must be checked on the display and the termination message print.

④ Test termination

117 | EX---- 117

Termination print

X = 1: Non connect error
2: Verify error
3: Hardware error
4: P-OFF
5: Timer overflow error

[13] Standard RAM test

① Key operation
120 → TL

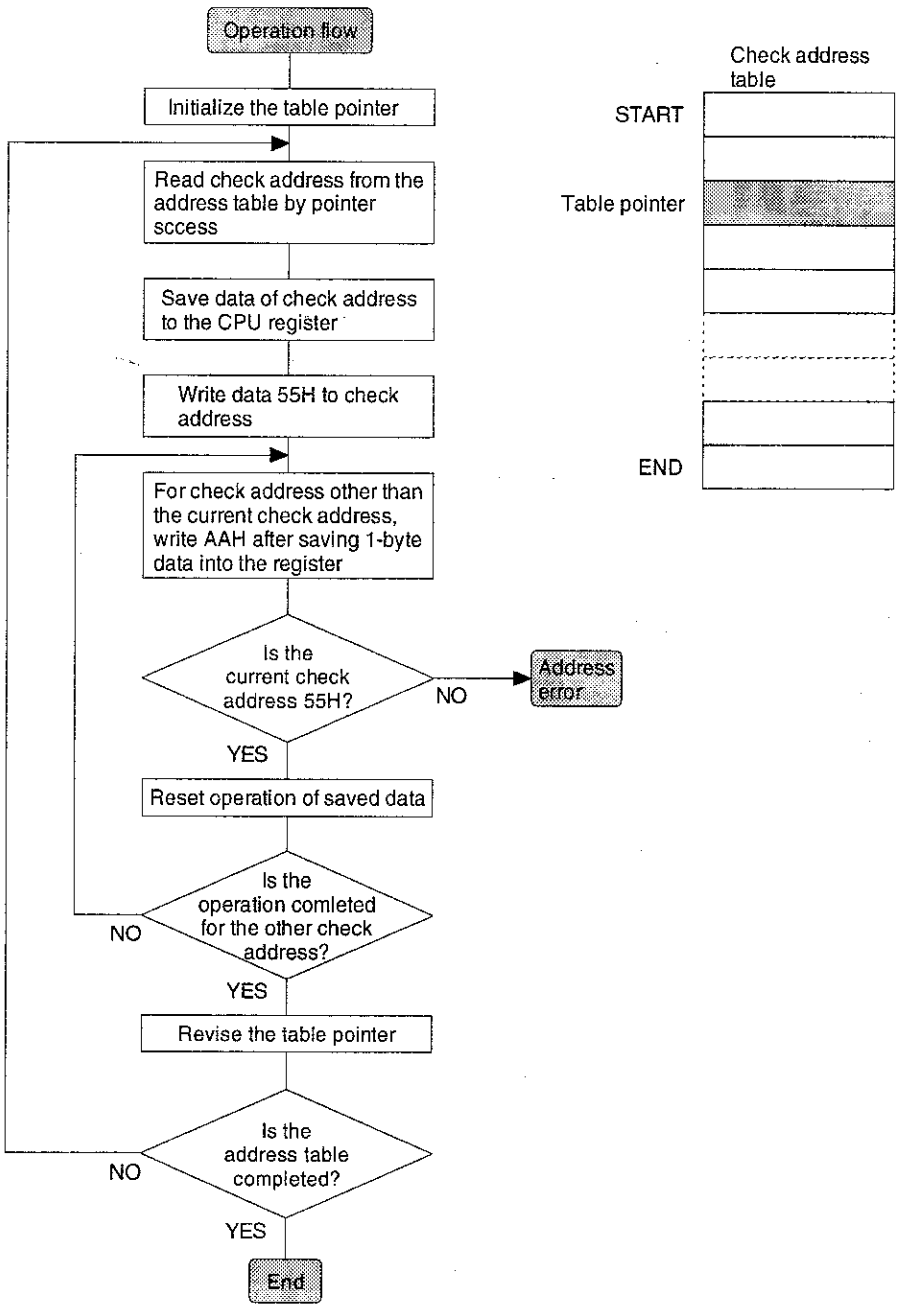
② Functional description
Perform the following check for the standard RAM 128 KByte SRAM. The memory contents should not be changed before and after the check.

Perform the following processes for memory address to be checked (1C0000H~1DFFFFH).
PASS1: Save memory data.

PASS2: Write data "0000H."
PASS3: Read and compare data "0000H," write data "5555H."
PASS4: Read and compare data "5555H," write data "AAAAH."
PASS5: Read and compare data "AAAAH."
PASS6: Restore the memory data.

If a comtare error occurs in the check sequence PASS1-PASS6, an error print is made. If no error occurs through all address, the check ends normally.

The following address check is performed further.
Check point address = 1C0000H, 1C0001H
1C0002H, 1C0004H
1C0008H, 1C0010H
1C0020H, 1C0040H
1C0080H, 1C0100H
1C0200H, 1C0400H
1C0800H, 1C1000H
1C2000H, 1C4000H
1C8000H, 1D0000H


Operation flow
Initialize the table pointer
Read check address from the address table by pointer sccess
Save data of check address to the CPU register
Write data 55H to check address
For check address other than the current check address, write AAH after saving 1-byte data into the register
Is the current check address 55H?
NO
Address error
YES
Reset operation of saved data
Is the operation comleted for the other check address?
NO
YES
Revise the table pointer
Is the address table completed?
NO
YES
End
Check address table
START
Table pointer
END

③ Check the following items:
Check the termination printout.

④ Test termination
The test terminates after printing the termination printout.
Termination printout:

Normal termination		120
Abnormal termination	Ex - - - - -	120
		※※※※※

X = 1: Data check error
2: Address check error

Note: When an error occurs, the error print is performed and the check is terminated. The error occurrence address is shown in hexadecimal at positions shown with ※※※※※.

[14] Standard ROM test

① Key operation
130 → TL

② Functional description
Sum check of the standard ROM (C00000H - C7FFFFH) is performed. If the lower two digits of SUM is 10H, it is normal.

DOT DISPLAY : S - R O M S R V .

③ Check the following items:
Check the printout after the test.

④ Test termination
The test automatically terminates with termination message.

Normal termination print		130
	ROM1	27040※※※※※
Error termination print	E - - - -	130
	ROM1	27040※※※※※

Note: "※※※※※" means the ROM version number.
The underlined section (10 bytes) of code table is provided in the ROM as a standard and the table content is always printed.
The table position is the upper 10 digits of the ROM address.
The check sum correction address is the last address -0FH.

[15] R/J printer dot pulse width adjustment

The dot pulse width adjust circuit is provided to control the width of the current applied to the dot head of the printer KI-OB6753RCZZ, according to a supply voltage fluctuation.
When the circuit is changed with a new one for such as a repair work, the dot pulse width needs to be adjusted using the 200K pot VR2.

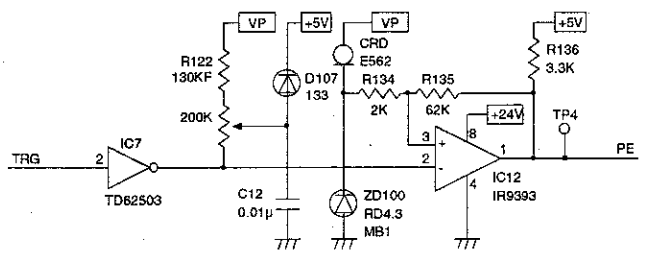


Fig. 3-3

Dot pulse adjusting method

1. Turn power on.
2. Measure the voltage of the VP line between the fuse F1 and GND. Use a digital voltmeter capable of measuring 100mV steps.
3. Set the MODE switch to the SRV position and start the diagnostic program Job #150 with the next command procedure.
   150 → TL
4. Adjust pulse width of TPW at the test point TP4 as shown in the graph in Fig.3. The pulse width of TPW can be adjusted using the 200K pot VR2.
5. To terminate the diagnostic program, just press any key.

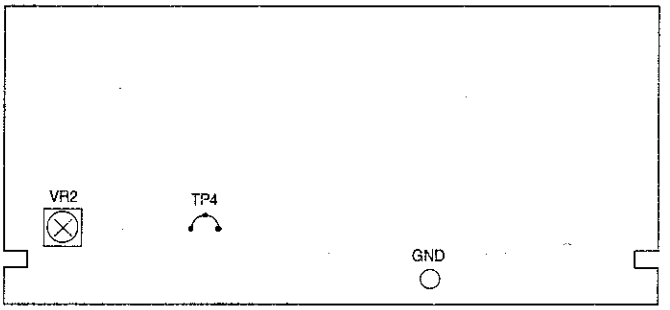
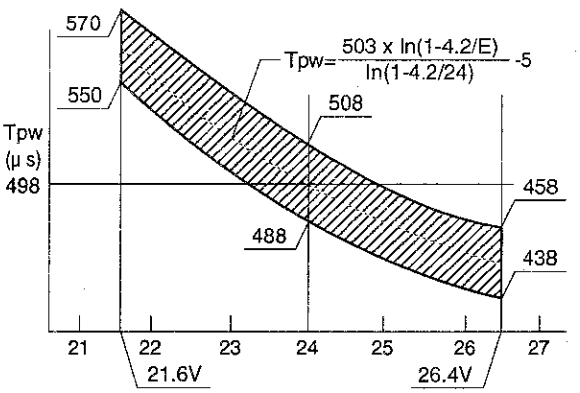


Fig. 3-4



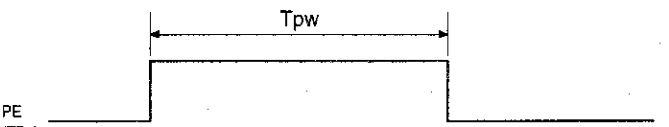


Fig. 3-5

※ For the adjustment of VP, refer to CHAPTER 7. SERVICE PRECAUTION. (Printer printing speed adjustment)

[16] Option RAM test

① Key operation
20X → TL

JOB #NO.	RAM NO.	Memory to be checked	Address area to be checked
200	Option RAM (main)	ER-01RA	1E0000H ~ 1E7FFFH
201	Option RAM (main)	ER-02RA	1E0000H ~ 1FFFFFH
202	ER-01MB RAM1	ER-02RA+ER-01MB	1E0000H ~ 21FFFFH
203	ER-01MB RAM2	ER-02RA+ (ER-01MB+ER-02RA)	1E0000H ~ 23FFFFH
204	ER-01MB RAM3	ER-02RA+ (ER-01MB+ER-02RA×2)	1E0000H ~ 25FFFFH
205	ER-01MB RAM4	ER-02RA+ (ER-01MB+ER-02RA×3)	1E0000H ~ 27FFFFH
206	ER-02MB	ER-02RA+ER-02MB	1E0000H ~ 2FFFFFH

② Content
The following check are performed for the optional RAM. Do not change the memory contents before and after this check JOB.
The following process is performed for memory address to be checked.

PASS1: memory data save
PASS2: Data "0000H" write
PASS3: Data "0000H" read and comparison, data "5555H" write
PASS4: Data "5555H" read and comparison, data "AAAAH" write
PASS5: Data "AAAAH" read and comparison
PASS6: Memory data restore

If a compare error is found in the check sequence from PASS1 to PASS6, error print (error code E1) is performed. If there is no error found to the end of the last address, the operation is completed normally.

Then the following address check is performed by judging the option chip to be integrated. The check point addresses are as follows:

Check Address	JOB200	JOB201	JOB202	JOB203	JOB204	JOB205	JOB206
1E0000H	O	O	O	O	O	O	O
1E0001H	O	O	O	O	O	O	O
1E0002H	O	O	O	O	O	O	O
1E0004H	O	O	O	O	O	O	O
1E0008H	O	O	O	O	O	O	O
1E0010H	O	O	O	O	O	O	O
1E0020H	O	O	O	O	O	O	O
1E0040H	O	O	O	O	O	O	O
1E0080H	O	O	O	O	O	O	O
1E0100H	O	O	O	O	O	O	O
1E0200H	O	O	O	O	O	O	O
1E0400H	O	O	O	O	O	O	O
1E0800H	O	O	O	O	O	O	O
1E1000H	O	O	O	O	O	O	O
1E2000H	O	O	O	O	O	O	O
1E4000H	O	O	O	O	O	O	O
1E8000H	—	O	O	O	O	O	O
1F0000H	—	O	O	O	O	O	O
200000H	—	—	O	O	O	O	O
210000H	—	—	O	O	O	O	O
220000H	—	—	—	O	O	O	O
240000H	—	—	—	—	O	O	O
260000H	—	—	—	—	—	O	O
280000H	—	—	—	—	—	—	O

"O" in the table shows that the check point address in the horizontal column is valid, and "—" shows it is invalid.
When any error occurs in this address check, error code E2 is printed.

③ Check the following items.
Check the termination print.

④ Test termination
The test terminates after printing the termination printout.

Termination print

Normal termination		20X
Abnormal termination	EY----	20X
		******

20X: JOB # (200~206)
Y: Error code

Note: When an error occurs error print is performed and the error address is displayed in position ****** in hexadecimal.

[17] Option RAM address test

① Key operation
30X → TL (X: 0~6)

JOB #NO.	RAM NO.	Memory to be checked	Address area to be checked
300	Option RAM (main)	ER-01RA	1E0000H ≀ 1E7FFFH
301	Option RAM (main)	ER-02RA	1E0000H ≀ 1FFFFFH
302	ER-01MB RAM1	ER-02RA+ER-01MB	1E0000H ≀ 21FFFFH
303	ER-01MB RAM2	ER-02RA+ (ER-01MB+ER-02RA)	1E0000H ≀ 23FFFFH
304	ER-01MB RAM3	ER-02RA+ (ER-01MB+ER-02RAX2)	1E0000H ≀ 25FFFFH
305	ER-01MB RAM4	ER-02RA+ (ER-01MB+ER-02RAX3)	1E0000H ≀ 27FFFFH
306	ER-02MB	ER-02RA+ER-02MB	1E0000H ≀ 2FFFFFH

② Functional description
The following check are performed for the optional RAM. Do not change.

Check Address	JOB300	JOB301	JOB302	JOB303	JOB304	JOB305	JOB306
1E0000H	O	O	O	O	O	O	O
1E0001H	O	O	O	O	O	O	O
1E0002H	O	O	O	O	O	O	O
1E0004H	O	O	O	O	O	O	O
1E0008H	O	O	O	O	O	O	O
1E0010H	O	O	O	O	O	O	O
1E0020H	O	O	O	O	O	O	O
1E0040H	O	O	O	O	O	O	O
1E0080H	O	O	O	O	O	O	O
1E0100H	O	O	O	O	O	O	O
1E0200H	O	O	O	O	O	O	O
1E0400H	O	O	O	O	O	O	O
1E0800H	O	O	O	O	O	O	O
1E1000H	O	O	O	O	O	O	O
1E2000H	O	O	O	O	O	O	O
1E4000H	O	O	O	O	O	O	O
1E8000H	—	O	O	O	O	O	O
1F0000H	—	O	O	O	O	O	O
200000H	—	—	O	O	O	O	O
210000H	—	—	O	O	O	O	O
220000H	—	—	—	O	O	O	O
240000H	—	—	—	—	O	O	O
260000H	—	—	—	—	—	O	O
280000H	—	—	—	—	—	—	O

"O" in the table shows that the check point address is valid, and "—" shows that it is invalid.

③ Check the following items.
Check the termination print.

④ Test termination
The test terminates after printing the termination printout.

Termination printout

Normal termination		30X
Abnormal termination	EY- - - -	30X
		※※※※※※

30X: JOB# (300~306)
Y: Error code

Note: When an error occurs error print is performed and the error address is displayed in position ※※※※※※ in hexadecimal.

[18] Option ROM test

① Key operation:
400 → TL

② Functional description:
A sum check is done for the option ROM (Address hex C80000H thru CBFFFFH.)

③ Check the following items:
Check the termination printout.

④ Test termination:
The test terminates after printing the termination printout.
Termination printout

Normal termination		400
	ROM	27020※※※※※
	E- - - - -	400
	ROM	27020※※※※※

The underlined section must be the same as the standard ROM test specification. (Refer to JOB #130.)

CHAPTER 6. DOWN LOAD FUNCTION

1. General

RAM data can be transmitted in the following two methods.
Save the data before servicing as follows:

① ECR ←→ ECR

- Cable: ER-A5CB

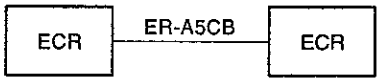


Fig. 1-1

② ECR ←→ ER-02FD

- Cable: Cable (QCNW-7578RCZZ) packed with the ER-02FD

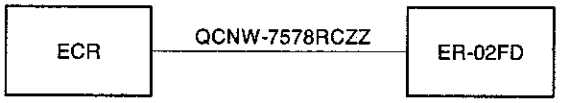


Fig. 1-2

2. SIO interface specification

1) Operation: Simplex
2) Line configuration: Direct connect
3) Data rate: 19200, 9600, 4800, 2400, 1200, 600, 300BPS (Selected by SRV JOB#903-A)
4) Sync mode: Asynchronous
5) Checking: Vertical parity (odd)
6) Code: 7 bits (ASCII)
7) Bit sequence: LSB first
8) Line level: TTL level
9) Data forma:

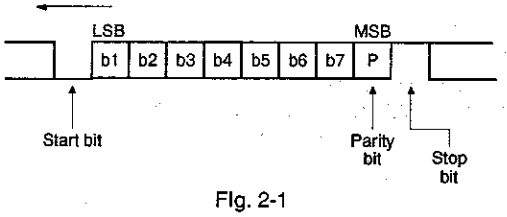


Fig. 2-1

3. Location of connector pins

① ER-A5CB

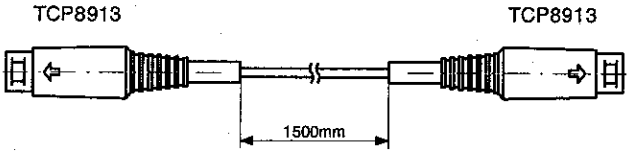


Fig. 3-1

Signal name	Pin No.
GND	1
$\overline{ER}$	2
$\overline{CD}$	3
$\overline{RR}$	4
$\overline{CS}$	5
$\overline{DR}$	6
RXD	7
TXD	8
$\overline{RS}$	9

Pin No.	Signal name
1	GND
2	$\overline{ER}$
3	$\overline{DR}$
4	RXD
5	TXD
6	$\overline{CD}$
7	$\overline{RR}$
8	$\overline{CS}$
9	$\overline{RS}$

Fig. 3-2

② QCNW-7578RCZZ

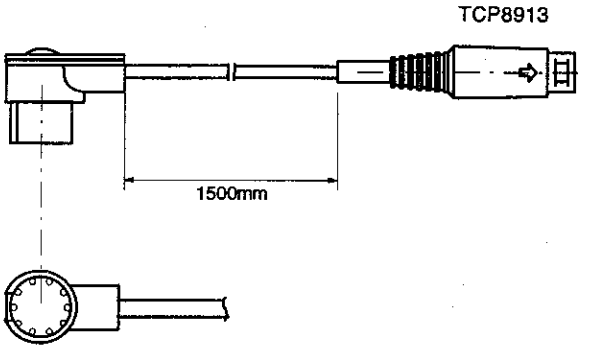


Fig. 3-3

Signal name	Pin No.
GND	1
NC	2
$\overline{ER}$	3
$\overline{CD}$	4
$\overline{RR}$	5
$\overline{CS}$	6
$\overline{DR}$	7
RXD	8
TXD	9
$\overline{RS}$	10

Pin No.	Signal name
1	GND
2	$\overline{ER}$
3	$\overline{DR}$
4	RXD
5	TXD
6	$\overline{CD}$
7	$\overline{RR}$
8	$\overline{CS}$
9	$\overline{RS}$

Fig. 3-4

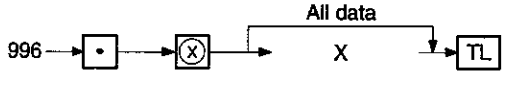
Interfacing signals

Pin No.	Signal name	In/Out	On level	Description
1	GND	—	—	Signal ground
2	$\overline{ER}$	Out	Low	Equipment ready
3	$\overline{DR}$	In	Low	Data set ready
4	RXD	In	High: MARK Low: SPACE	Receive data
5	TXD	Out	High: MARK Low: SPACE	Transmit data
6	$\overline{CD}$	In	Low	Carrier detect
7	$\overline{RR}$	Out	Low	Ready to receive
8	$\overline{CS}$	In	Low	Clear to send
9	$\overline{RS}$	Out	Low	Request to send

4. Application specification

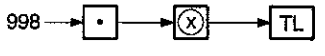
The following service (SRV) modes are available for the serial data transfer of the ER-A650.

1) Data transmit (Source side)



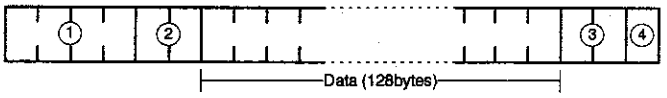
X: 0=SSP DATA
1 = Standard RAM+01RA/02RA
2 = 01MB (0.5MB)/02MB (0.5MB:1st half)
3 = 02MB (0.5MB: 2nd half)

2) Data receive (Target)



5. Data format

A single byte image of the RAM data to be transmitted is divided into a high order 4 bits and low order 4 bits and converted into ASCII code. Then, the image of the memory is sent in the following format:



① Memory top address: 0000H ~ FFFFH
Top address of the memory to be transmitted in ASCII number.

② Page:1D - 1F
Page of the memory to be transmitted in ASCII number.

③ Sum check

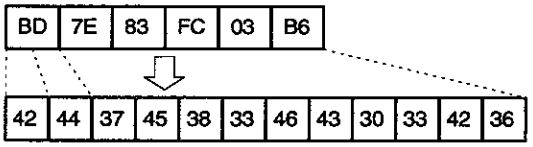
④ End code:
Hex 0D

NOTE:

- In order that contents of RAM memory may not over-ride pages for this job, RAM image is sent in unit of 64 bytes from the address 0000. In other words, 128 bytes are sent at one time on the transmit data format.

RAM DATA FORMAT

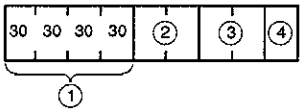
Exhibit:



Code table

HEX	ASCII	Character
0	30	0
1	31	1
2	32	2
3	33	3
4	34	4
5	35	5
6	36	6
7	37	7
8	38	8
9	39	9
A	41	A
B	42	B
C	43	C
D	44	D
E	45	E
F	46	F

6. END record



① End message:
Fixed to 30303030.

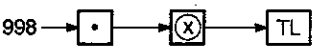
② End massage:
Fixed to 4646.

③ Sum check

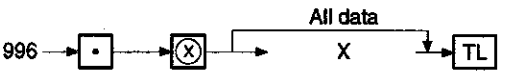
④ End code:
CR (0D)

7. Operational method

1) To prepare an ER-A650 to receive data from another ER-A650 or the ER-02FD, the memory size of the receiving unit must the same as or greater than the sending unit.
2) Master reset the receiving ER-A650.
3) Match the baud rate of the transmitter with the receiver using JOB#995 in the SRV mode.
4) Connect loader cable (QCNW-7578RCZZ or ER-A5CB) between ER-A650s.
5) Set the receiving ER-A650 ready to receive.



6) Start the sending ER-A650.



X: 0 = SSP
1 = Standard RAM+01RA/02RA
2 = 01MB (0.5MB)/02MB (0.5MB:1st half)
3 = 02MB (0.5MB: 2nd half)

7) Transmission status.
Description of error status
1: Application error (Command error)
2: Line error (DTR OFF)
3: Application error (Parity error)
4: Application error (Check sum error)
5: Application error (Data size error)
6: Hard ware error
7: Power off error
10: Time out error
11: Application error (Transmit data size error)
12: Application error (Block sequence error)
13: Memory full error

8) Service reset the receiving ER-A650.

8. Saving/Loading of data to/From the FD unit Configuration

1) Turn off the power switch of the ER-02FD, and set the DIP switches of the FD unit as follows:

ER-02FD (The ER-01FD functions of the ER-02FD are used.)

DS-1								DS-2			
1	2	3	4	5	6	7	8	1	2	3	4
OFF	ON	OFF	ON	ON	OFF	OFF	OFF	X	OFF	OFF	OFF

Data rate

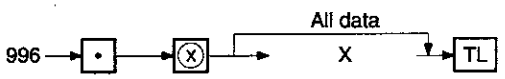
4	6	Rate [bps]
OFF	OFF	19200
ON	OFF	9600
OFF	ON	4800
ON	ON	2400

Disk format
CCP/M: OFF
PC-DOS: ON

2) Connect the QCNW–7578RCZZ cable.

Saving data

1) Turn on the power switch and insert a floppy disk which has been formatted.
2) Start the SEND JOB on the ECR side as follows:

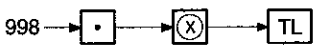


X: 0 = SSP
1 = Standard RAM+01RA/02RA
2 = 01MB (0.5MB)/02MB (0.5MB:1st half)
3 = 02MB (0.5MB: 2nd half)

3) Data transmission is started and the green lamp on the ER-02FD blinks.

Loading data

1) Turn on the power switch and insert the floppy disk which stores the data.
2) Start the RECEIVE JOB on the ECR side as follows:



3) Press the [SEND] key on the FD unit.
4) Data transmission is started and the Green lamp on the ER-02FD blinks.
5) Service reset the ECR.

CHAPTER 7. SERVICE PRECAUTION

1. Hints and tips when installing the RAM chip option (ER-02RA)

1) When the RAM option (ER-02RA) is to be installed to the main PWB, be sure that the ER-02RA is facing in the right direction.

2. Printer motor lock

In the ER-A650, the motor will automatically turn off when a premature halting of the timing signals occurs due to a paper misfeed, ribbon jam, intrusion of alien object, etc. When the motor stops, an intermittent beeping will occur, with no indication in the display.

<How to reset the motor lock>: R/J printer

1) Disconnect the AC cord from the wall outlet. And remove the cause.
2) When power is restored, the following is displayed.

PRINTER ERROR

Fig. 2-1

3) Depress the [CL] key to return the ER-A650 to the point where the cause happened. The power failure symbols will be printed after a line feed.
4) Print sample

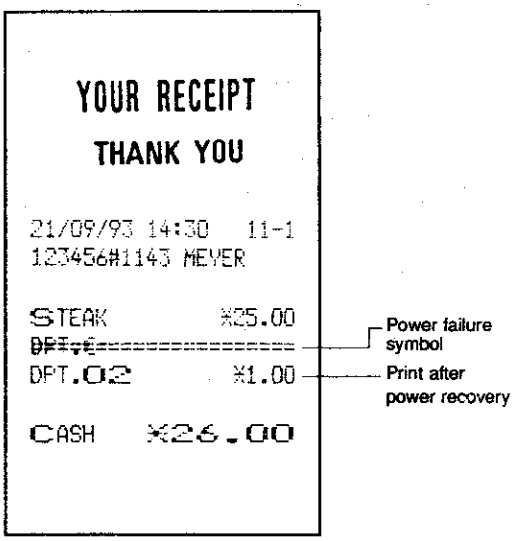


Fig. 2-2

3. Note for upper cabinet installation

When installing the upper cabinet again, be sure to connect the GND wire (QCNW-7120RCZZ) to the proper connector in front of the printer.

4. Others

1) If D1 shorts, the VRAM is shorted with the 5V supply.
In this event, normal operation is usually possible, except that it may not recharge the battery, failing to back it up, resulting in memory frustration.

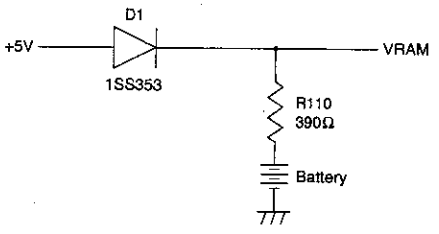


Fig. 4-1

2) When installing the option I/F PWB, be sure to connect it to the left side (under the power PWB) when viewed from the rear of the body. Do not use the right side (under the printer).

3) When fuse F2 above the main PWB is blown off, be sure to check the zenor diode ZD104 (VHERD5.6FP3-1) and the thyristor SD1 (VHSDRA2TE//–1) for any damage as well as replace F2. If the diode is damaged, replace it with new one.

4) When removing or installing the option slot rear cover, be sure to lift up the pop-up display. Especially when installing the cover, be sure not to pinch the pop-up display cable between the upper cabinet and the cover.

5. Printer printing speed adjustment

When the printer unit or the power PWB is replaced, the following adjustments should be performed.

1) Tools required for adjustment

① A synchroscope or a universal counter

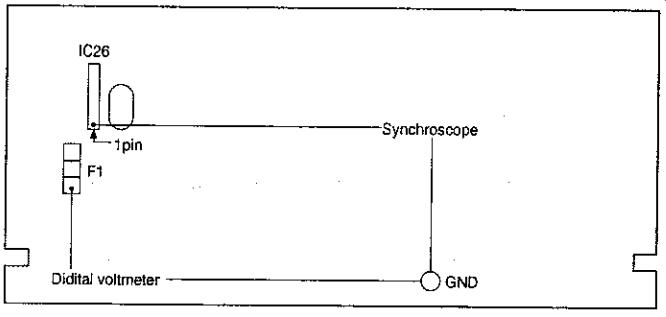
② A digital voltmeter

2) Adjustment procedure

① Remove fuse F1 from the main PWB.

② Connect the probe of the synchroscope or the digital voltmeter with 1 pin and GND of IC26 (SMA4392) on the main PWB.

③ Connect the digital voltmeter pin with fuse F1 and GND of the main PWB.

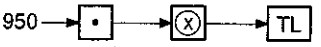


④ Perform the master reset.

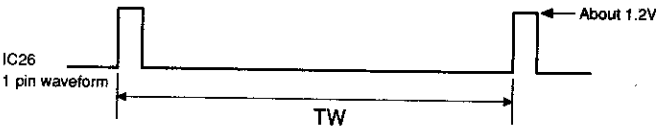
⑤ Turn VR1 on the PS PWB to adjust the voltage to 26.4V (Approx. 2.7 lines/sec).

∗ Adjust VP so that it is in the range of 24V to 26.4V.

⑥ Perform the printing procedure. (Printing is not performed because the fuse is removed.)



⑦ Measure the time of TW with the waveform of IC26 1 pin as shown in the figure below.



⑧ TW ≧ 357 ms: The adjustment is completed.
TW < 357 ms: Adjust VR1 on the PS PWB so that TW may be 357 ms ±5 ms.

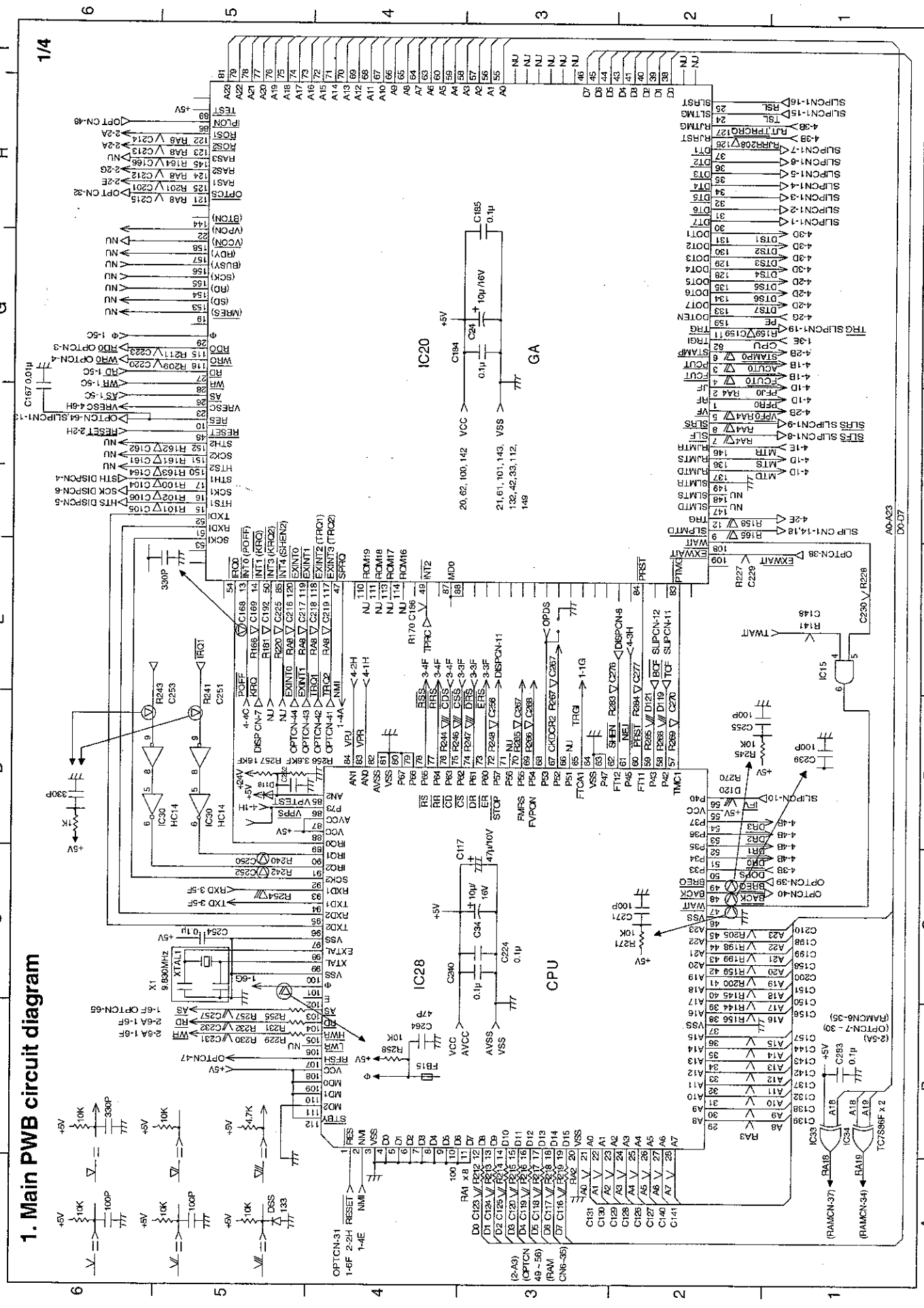
⑨ Turn off the power and disconnect the probe.

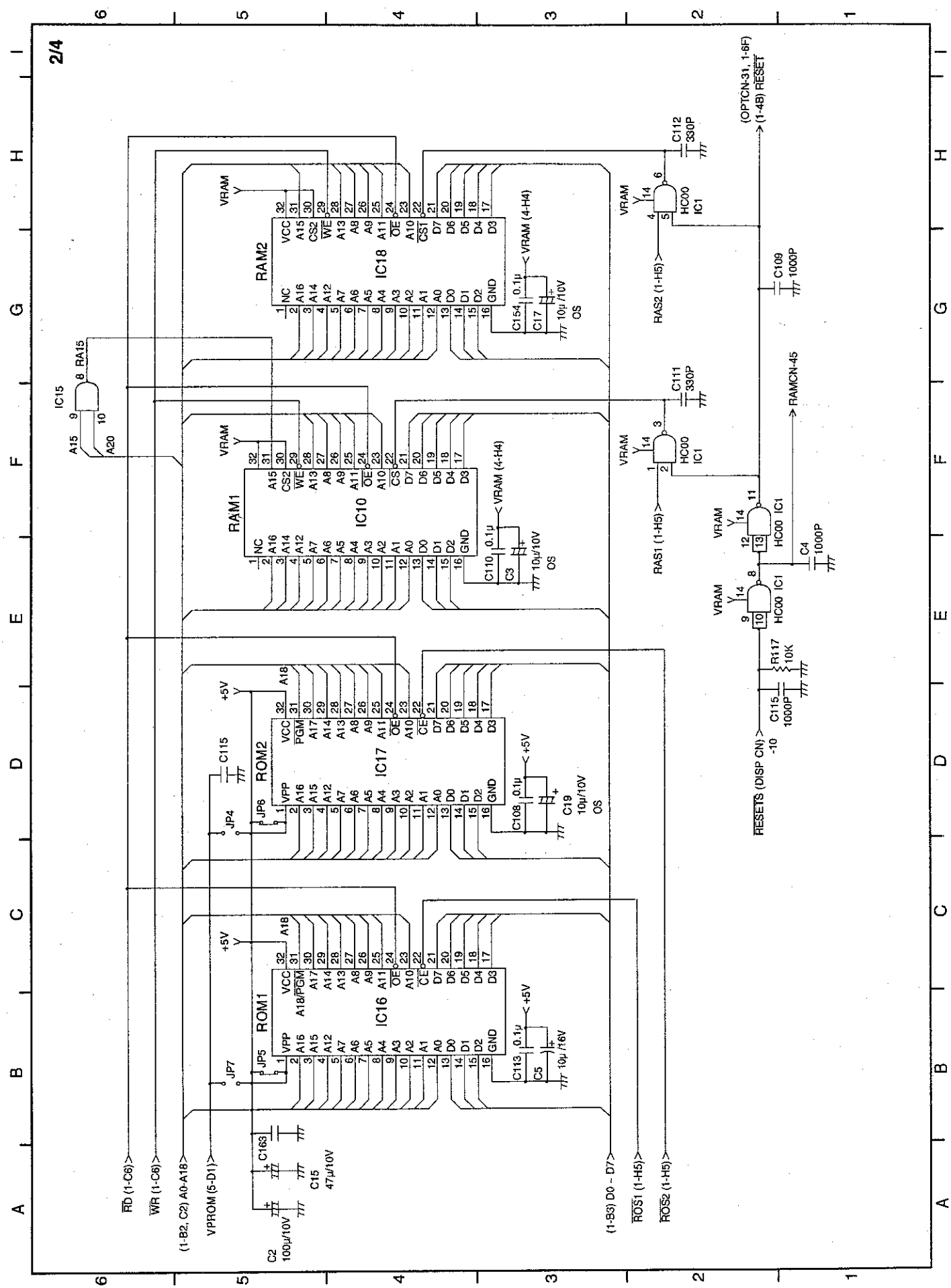
⑩ Attach the fuse to the original position.

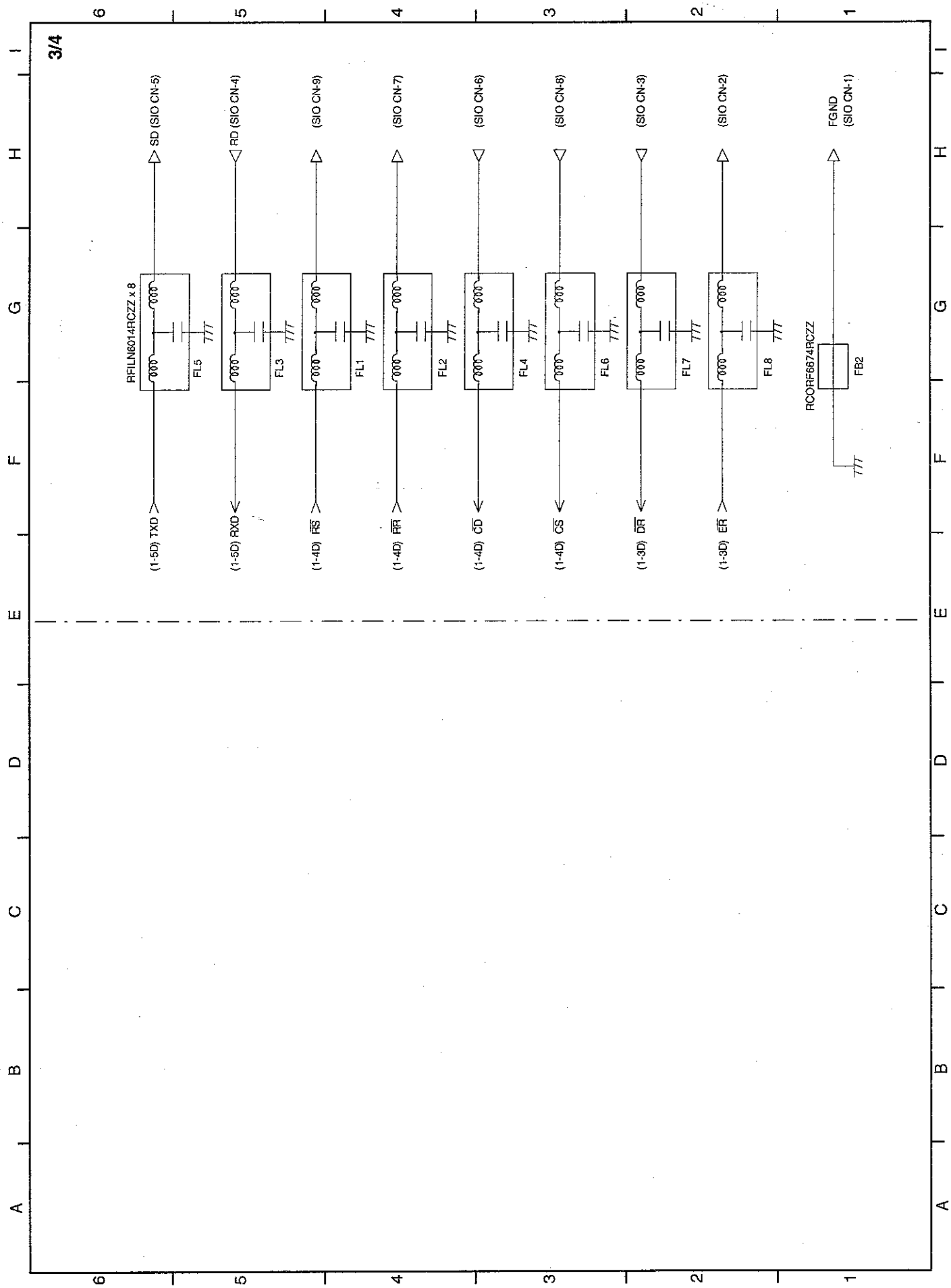
6. For the adjustment of printer dot pulse, refer to CHAPTER 5. TEST FUNCTION, Test No. 150.

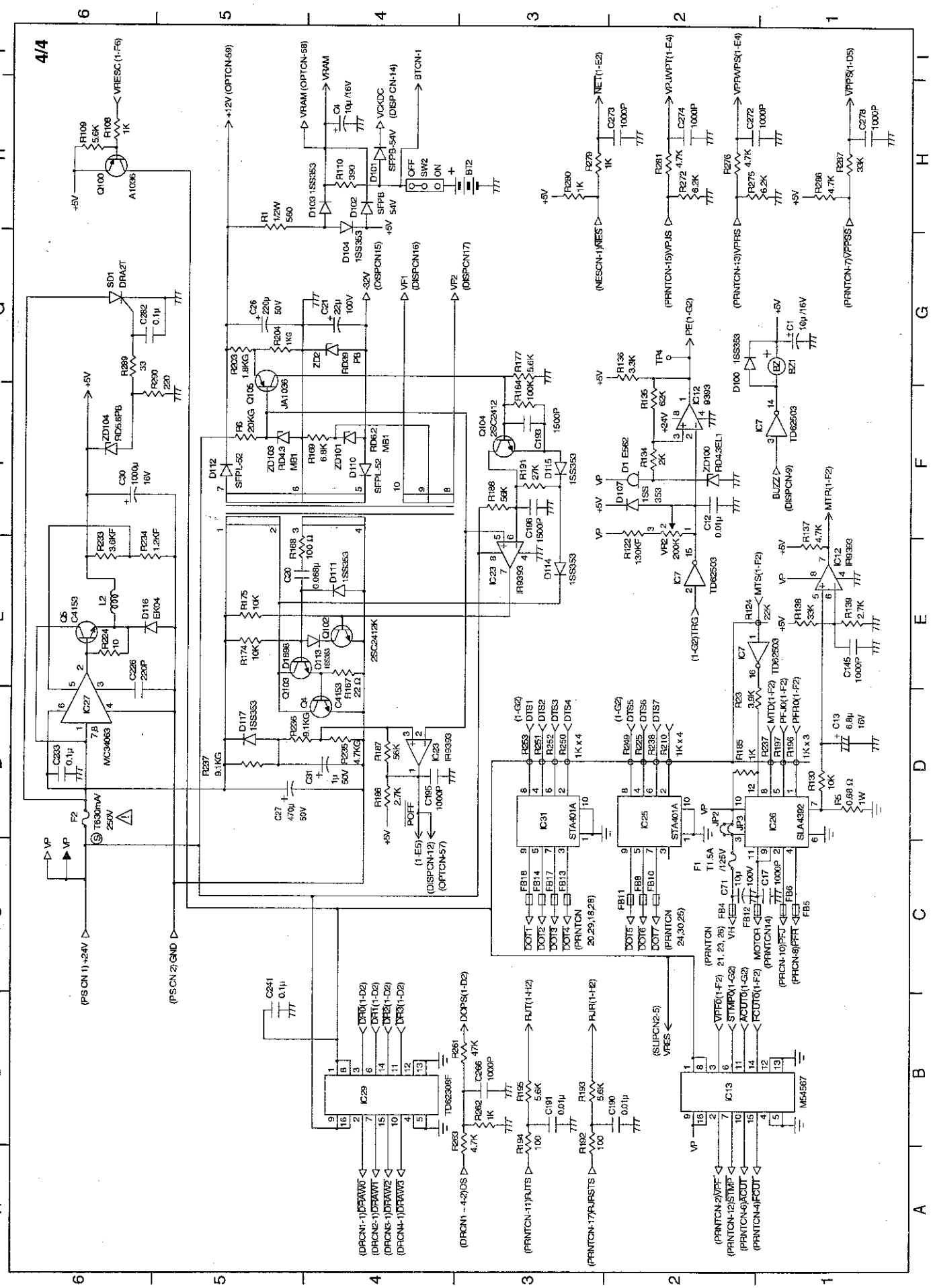
CHAPTER 8. CIRCUIT DIAGRAM & PWB LAYOUT

1. Main PWB circuit diagram




2/4
IC15
RA15
A15
A20
RAM2
IC18
VRAM (4-H4)
RAM1
IC10
ROM2
IC17
ROM1
IC16
JP4
JP6
JP5
JP7
C115
C108
C19
C113
C5
C163
C15
47µ/10V
C2
100µ/10V
C154
C17
C110
C3
C111
330P
C112
330P
C109
1000P
C4
1000P
C115
1000P
R117
10K
HC00
IC1
RAS1 (1-H5)
RAS2 (1-H5)
RAMCN-45
(OPTCN-31, 1-6F)
(1-4B) RESET
RESET5 (DISP CN)
-10
RD (1-C6)
WR (1-C6)
(1-B2, C2) A0-A18
VPROM (5-D1)
(1-B3) D0 - D7
ROS1 (1-H5)
ROS2 (1-H5)


3/4
SD (SIO CN-5)
RD (SIO CN-4)
(SIO CN-9)
(SIO CN-7)
(SIO CN-6)
(SIO CN-8)
(SIO CN-3)
(SIO CN-2)
FGND
(SIO CN-1)
RFILN6014RCZZ x 8
FL5
FL3
FL1
FL2
FL4
FL6
FL7
FL8
RCORF6674RCZZ
FB2
(1-5D) TXD
(1-5D) RXD
(1-4D) RS
(1-4D) RR
(1-4D) CD
(1-4D) CS
(1-3D) DR
(1-3D) ER


4/4

2. Main PWB conector table

OPT CN

SIGNAL	PIN	PIN	SIGNAL
GND	1	35	GND
GND	2	36	GND
$\overline{RDO}$	3	37	RD
$\overline{WRO}$	4	38	$\overline{EXWAIT}$
+5V	5	39	$\overline{BREQ}$
+5V	6	40	$\overline{BACK}$
A23	7	41	$\overline{TRQ2}$
A22	8	42	$\overline{TRQ1}$
A21	9	43	$\overline{EXINT1}$
A20	10	44	$\overline{EXINT0}$
A19	11	45	$\overline{TRRQ(IRQ1)}$
A18	12	46	$\overline{RSRQ(IRQ2)}$
A17	13	47	$\overline{RFSH}$
A16	14	48	$\overline{IPLON}$
A15	15	49	D7
A14	16	50	D6
A13	17	51	D5
A12	18	52	D4
A11	19	53	D3
A10	20	54	D2
A9	21	55	D1
A8	22	56	D0
A7	23	57	$\overline{POFF}$
A6	24	58	VRAM
A5	25	59	+12V
A4	26	60	A3
+24V	27	61	+24V
+24V	28	62	+24V
A1	29	63	A2
A0	30	64	$\overline{RES}$
$\overline{RESET}$	31	65	$\overline{AS}$
$\overline{OPTCS}$	32	66	$\overline{WR}$
GNDP	33	67	GND
GNDP	34	68	GND

PR CN

SIGNAL	PIN	PIN	SIGNAL
+24V	1	2	$\overline{VDF}$
NU	3	4	$\overline{FCUT}$
NU	5	6	$\overline{ACUT}$
$\overline{VPPSS}$	7	8	$\overline{PFR}$
GND	9	10	$\overline{PFJ}$
RJTS	11	12	$\overline{STMP}$
VPRS	13	14	MOTOR
VPJS	15	16	NU
RJRSTS	17	18	$\overline{DOT3}$
+5V	19	20	$\overline{DOT1}$
VH	21	22	NU
VH	23	24	$\overline{DOT5}$
$\overline{DOT7}$	25	26	VH
NU	27	28	$\overline{DOT4}$
$\overline{DOT2}$	29	30	$\overline{DOT6}$

DISP CN

C100, C101, C102, C103

PIN	SIGNAL
1	GND
2	GND
3	+5V
4	STH
5	$\overline{HTS}$
6	$\overline{SCK}$
7	$\overline{KRQ}$
8	$\overline{SHEN}$
9	BUZZ
10	$\overline{RESETS}$
11	$\overline{STOP}$
12	$\overline{POFF}$
13	GND
14	VCKDC
15	-32V
16	VF1
17	VF2
18	GND

NES CN

PIN	SIGNAL
1	$\overline{NES}$
2	GND

DR CN1

PIN	SIGNAL
1	DS
2	$\overline{DRAW0}$
3	+24V

DR CN2

PIN	SIGNAL
1	DS
2	$\overline{DRAW1}$
3	+24V

DR SP3

PIN	SIGNAL
1	$\overline{DRAW2}$
2	DS
3	+24V

DR SP4

PIN	SIGNAL
1	$\overline{DRAW3}$
2	DS
3	+24V

SIO CN

FB1

PIN	SIGNAL
1	GND-S
2	$\overline{ER}$
3	$\overline{DR}$
4	RXD
5	TXD
6	$\overline{CD}$
7	$\overline{RR}$
8	$\overline{CS}$
9	$\overline{RS}$

SLIP CN1

PIN	SIGNAL
1	$\overline{DT7}$
2	$\overline{DT6}$
3	$\overline{DT5}$
4	$\overline{DT4}$
5	$\overline{DT3}$
6	$\overline{DT2}$
7	$\overline{DT1}$
8	$\overline{SLFS}$
9	$\overline{SURS}$
10	$\overline{IFV}$
11	$\overline{TOF}$
12	$\overline{BOF}$
13	$\overline{RES}$
14	M240
15	TSL
16	RSL
17	NU
18	$\overline{MTDS}$
19	$\overline{TRG}$
20	NU

SLIP CN2

PIN	SIGNAL
1	+24V
2	GNDP
3	+5V
4	GND
5	VRES

BT CN

PIN	SIGNAL
1	VBT
2	GND

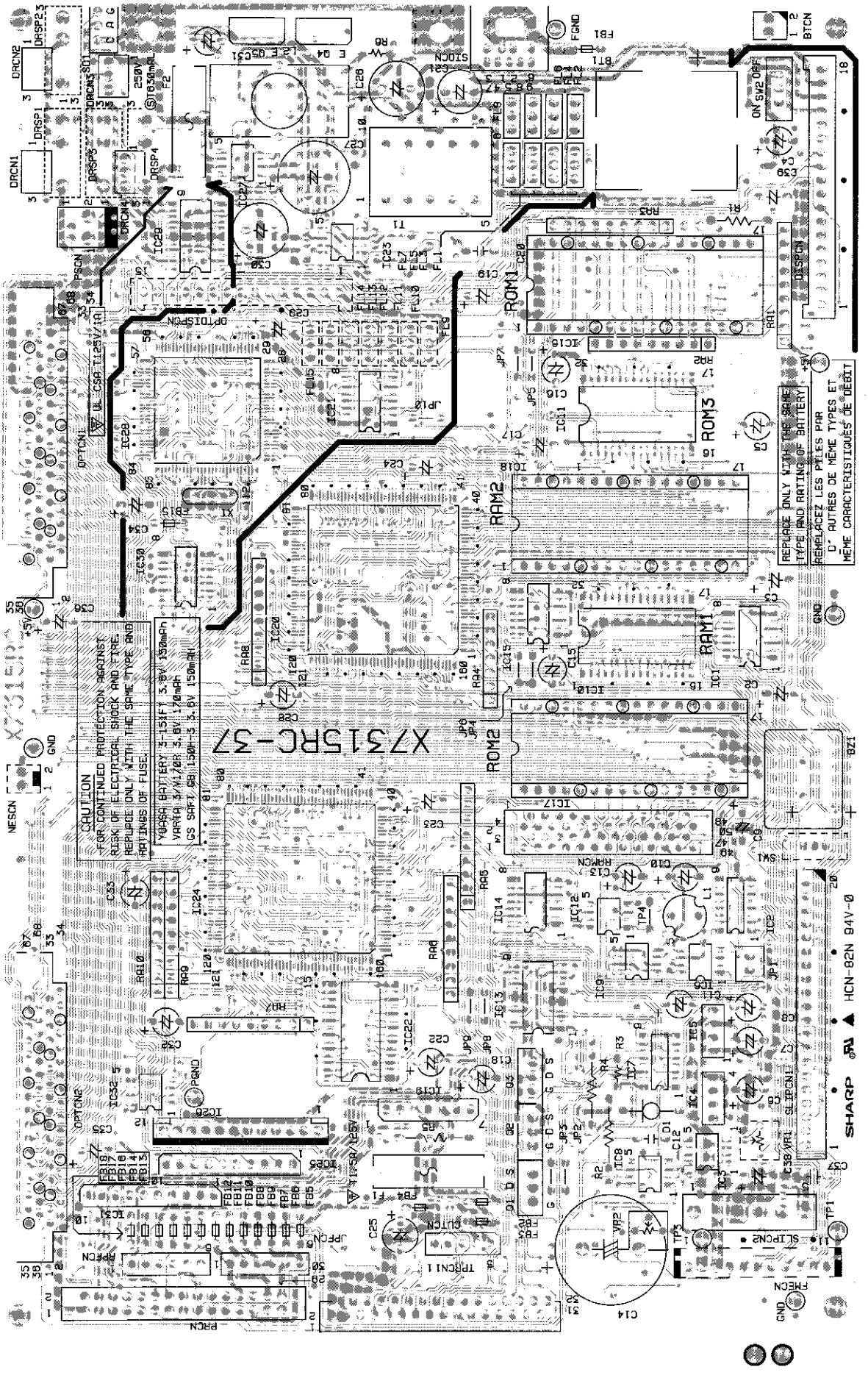
PS CN

PIN	SIGNAL
1	+24V
2	GND

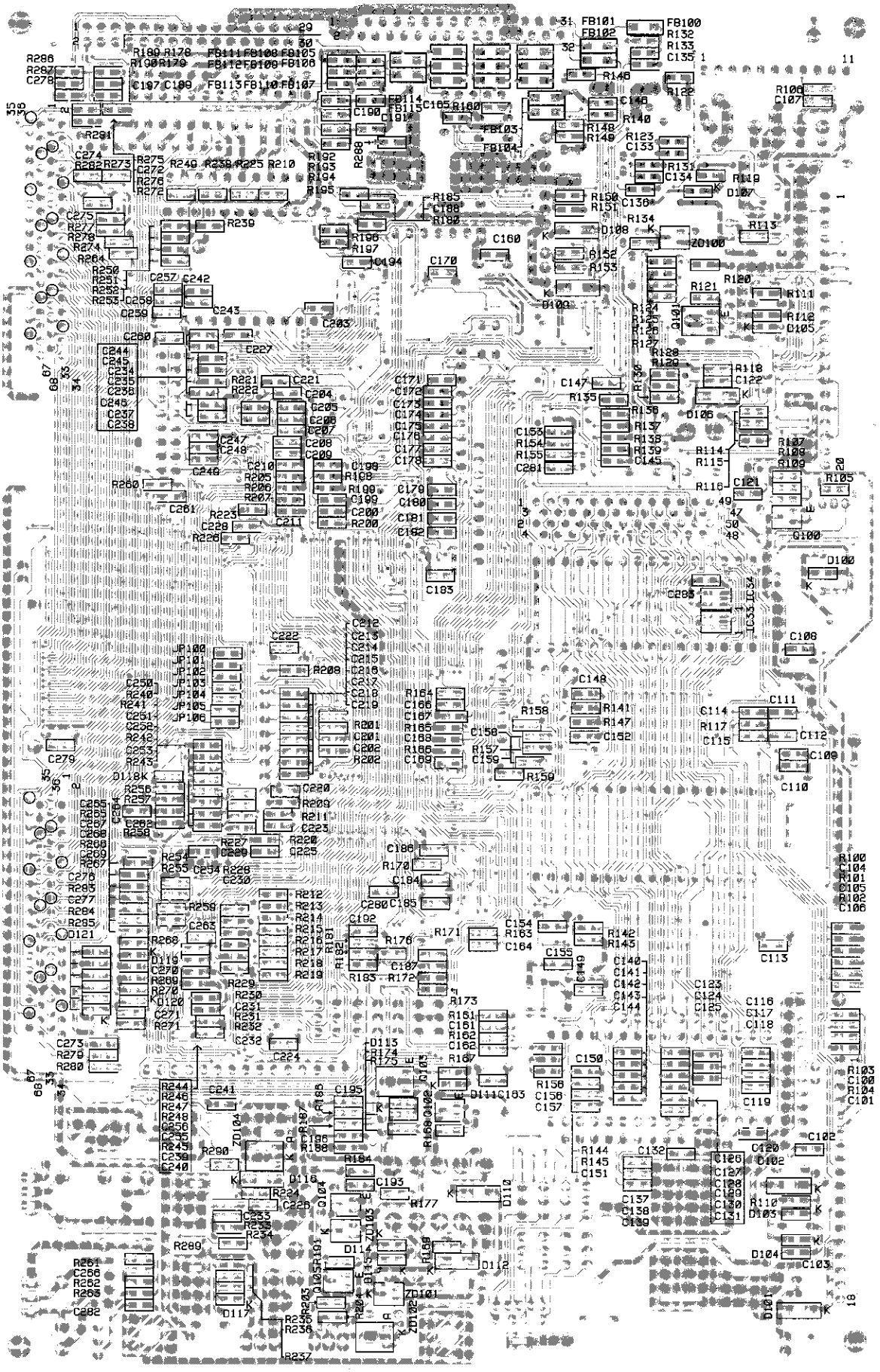
RAM CN

SIGNAL	PIN	PIN	SIGNAL
GND	1	2	GND
GND	3	4	GND
$\overline{RFSH}$	5	6	A20
+5V	7	8	+5V
+5V	9	10	+5V
VRAM	11	12	VRAM
VRAM	13	14	VRAM
A16	15	16	A15
A14	17	18	$\overline{WR}$
A12	19	20	A13
A7	21	22	A8
A6	23	24	A9
A5	25	26	A11
A4	27	28	$\overline{RD}$
A3	29	30	A10
A2	31	32	A17
A1	33	34	RA19
A0	35	36	RAS3
RA18	37	38	D7
D0	39	40	D6
D1	41	42	D5
D2	43	44	D4
RESET	45	46	D3
GND	47	48	GND
GND	49	50	GND

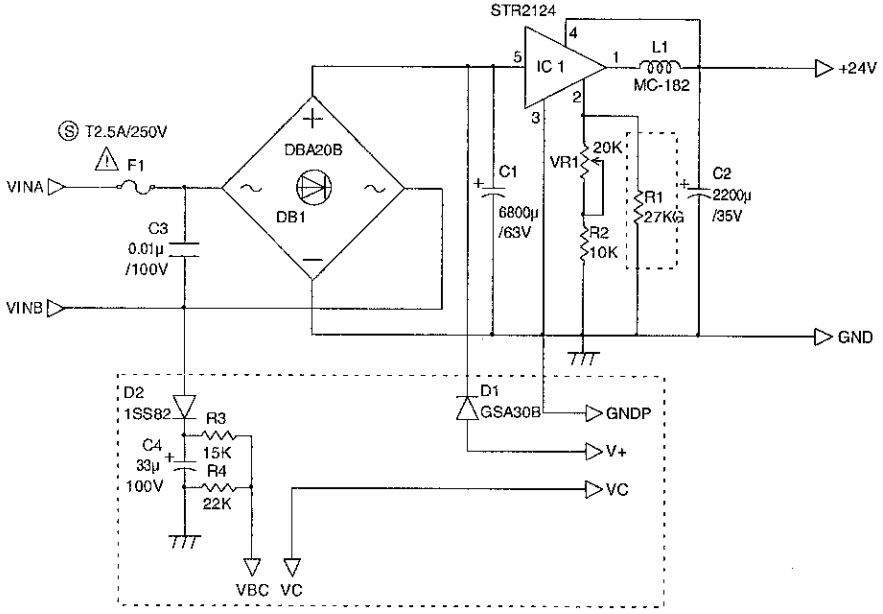
3. Main PWB layout (Parts side)



4. Main PWB layout (Solder side)



5. Power supply PWB circuit diagram ⚠



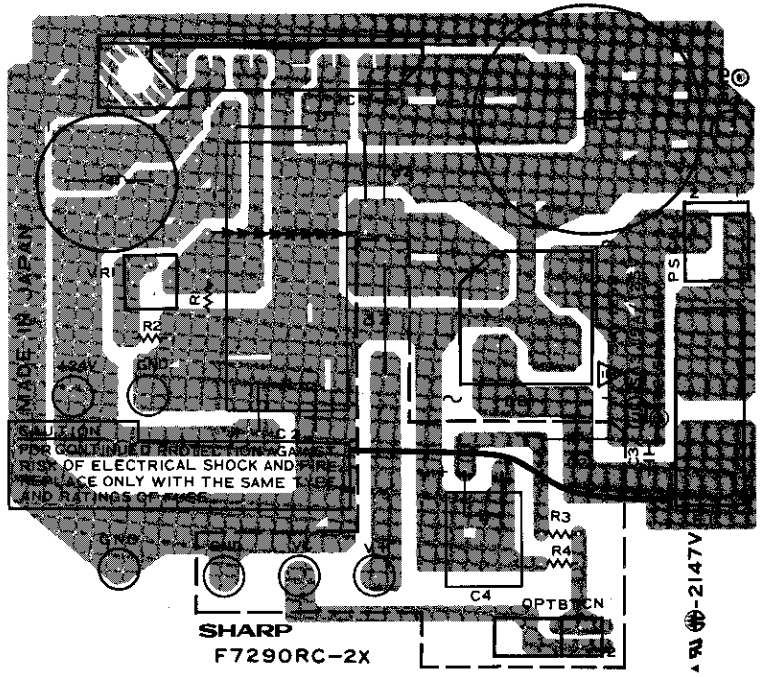
VIN CN

PIN	SIGNAL
1	VINA
2	VINB

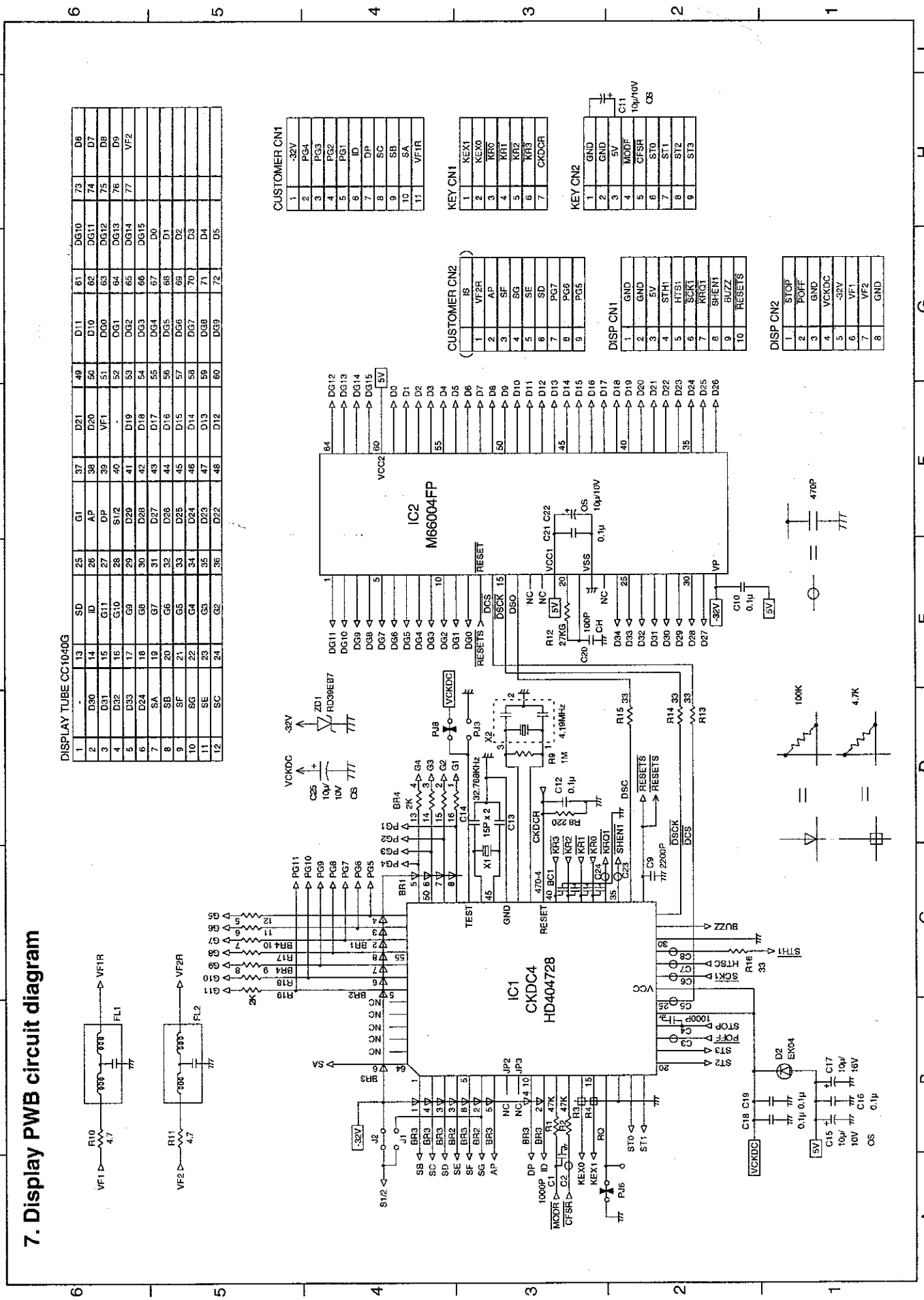
PIN	SIGNAL
1	V+
2	VC
3	GND

PIN	SIGNAL
1	VBC
2	VC

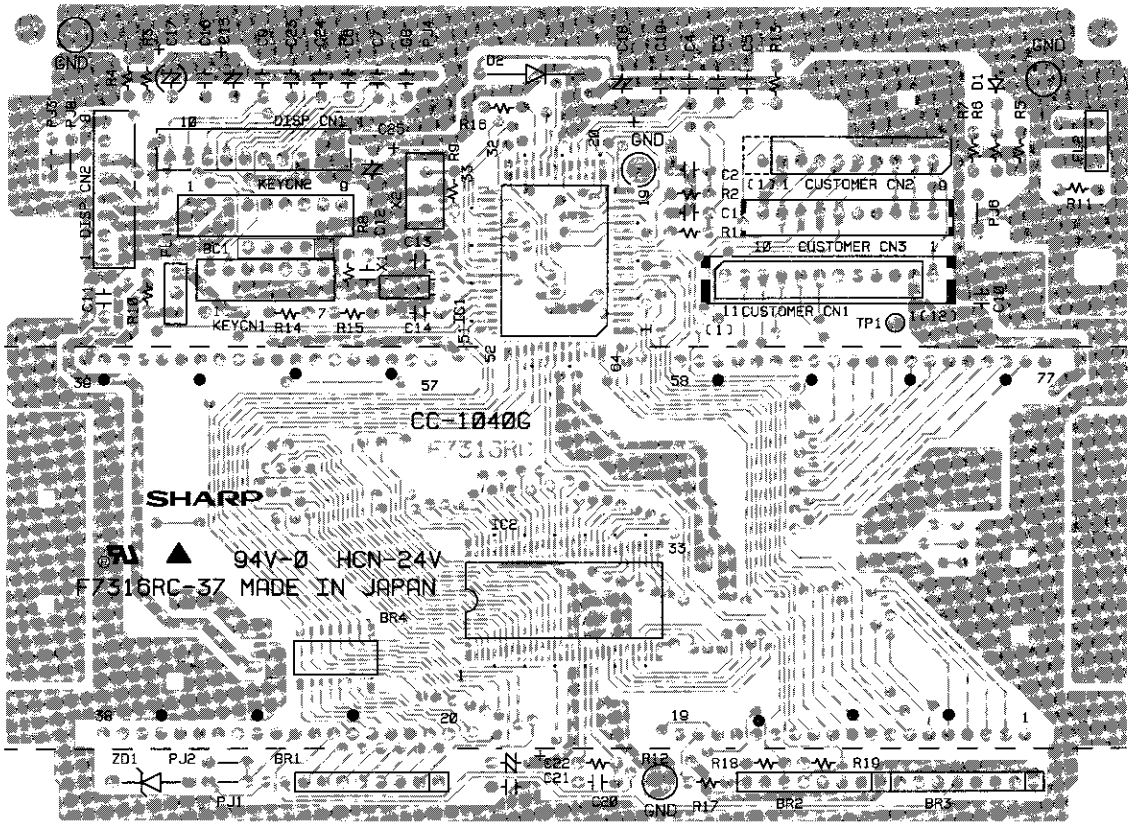
6. Power supply PWB layout



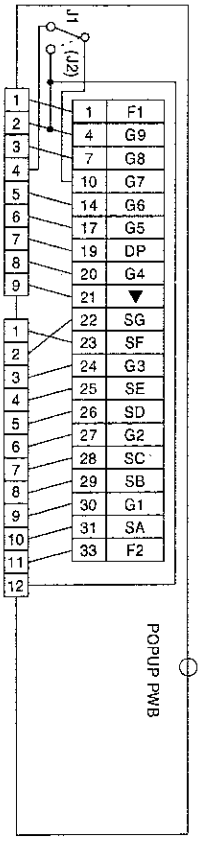
7. Display PWB circuit diagram



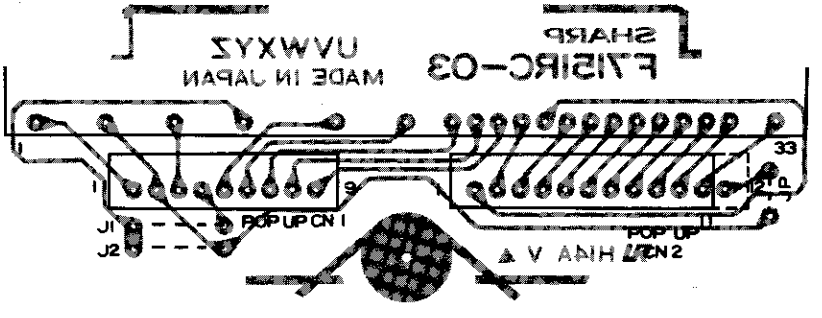
8. Dispaly PWB layout



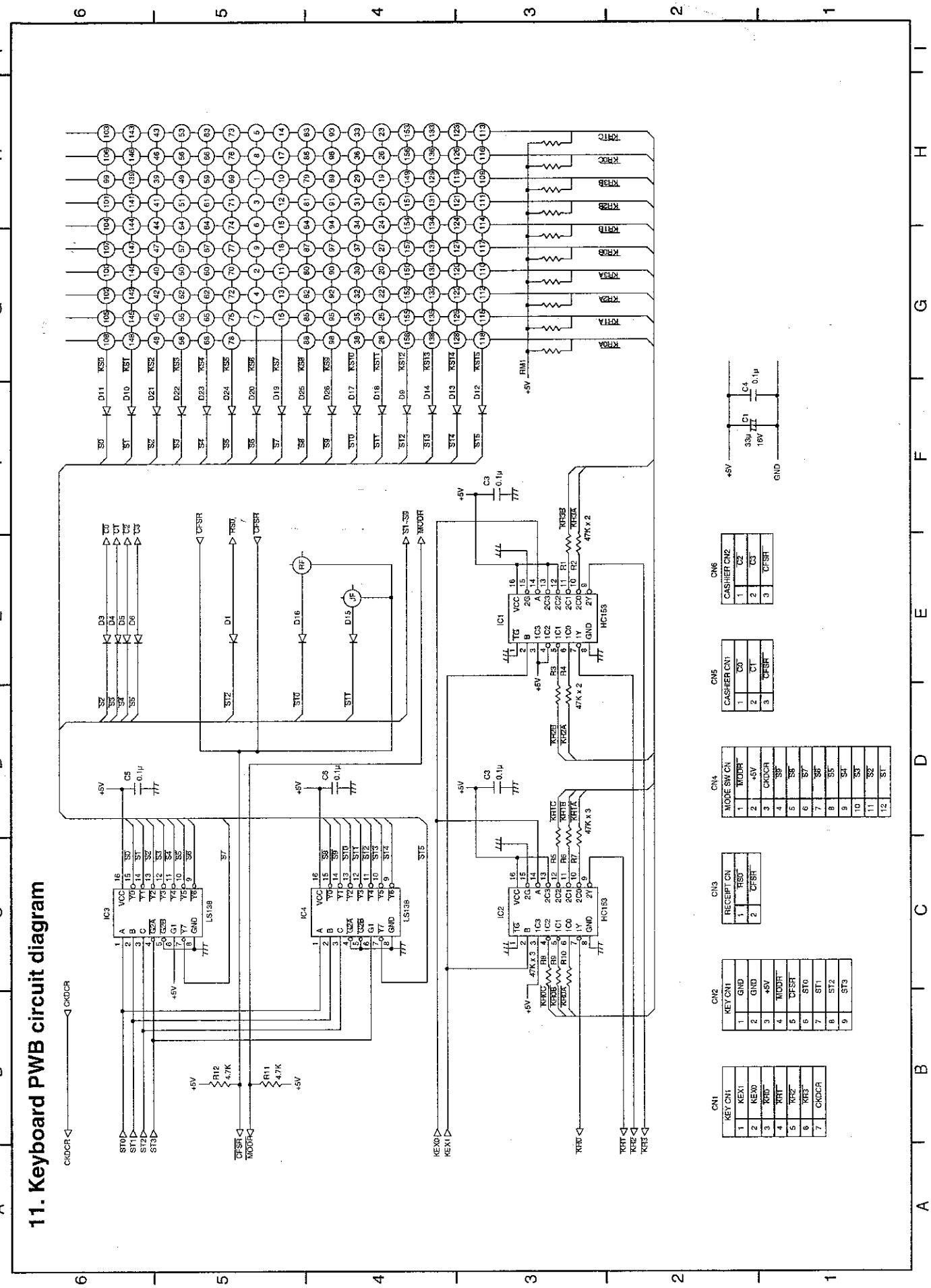
9. Pop-up display PWB circuit diagram



10. Pop-up display PWB layout



11. Keyboard PWB circuit diagram



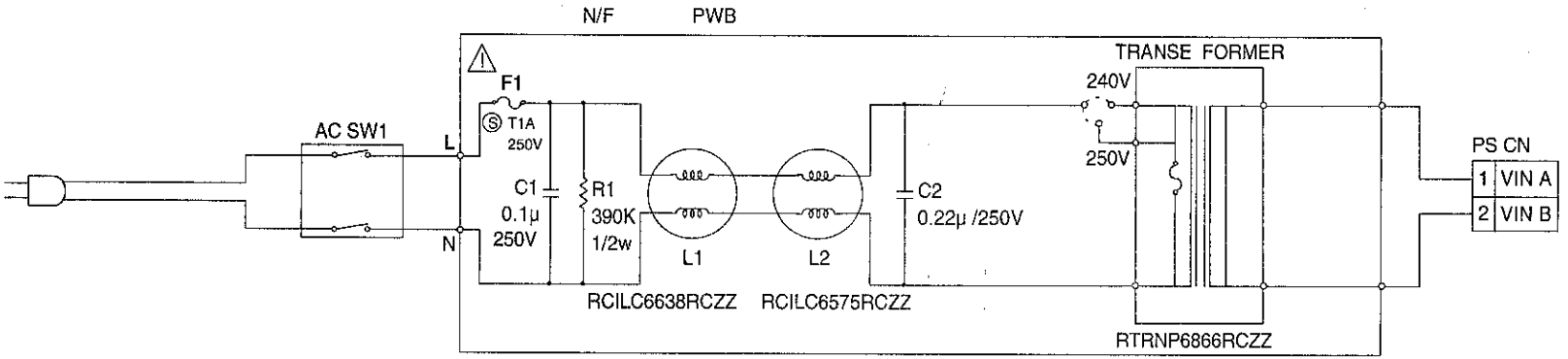
12. Keyboard position table

↑ RECEIPT	↑ JOURNAL	28	38	48	58	68	78	88	98	108	118	128	138	148	158
9	18	27	37	47	57	67	77	87	79	107	117	127	137	147	157
8	17	26	36	46	56	66	76	86	96	106	116	126	136	146	156
7	16	25	35	45	55	65	75	85	95	105	115	125	135	145	155
6	15	24	34	44	54	64	74	84	94	104	114	124	134	144	154
5	14	23	33	43	53	63	73	83	93	103	113	123	133	143	153
4	13	22	32	42	52	62	72	82	92	102	112	122	132	142	152
3	12	21	31	41	51	61	71	81	91	101	111	121	131	141	151
2	11	20	30	40	50	60	70	80	90	100	110	120	130	140	150
1	10	19	29	39	49	59	69	79	89	99	109	119	129	139	149

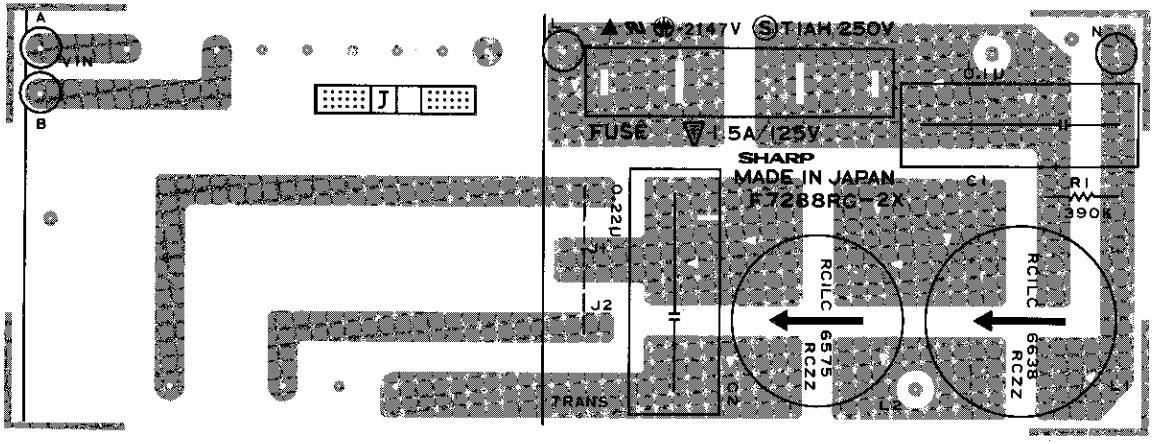
13. Noise filter PWB circuit diagram ⚠

NOISE FILTER PWB TYPE (F7288RC)

N/F TRANSE PWB UNIT



14. Noise filter PWB layout



SHARP PARTS GUIDE

MODEL ER-A650

PRINTER: M-820
(for KA, KB, TQ, TR, TS)

CONTENTS

1 Top cabinet etc.
2 Bottom cabinet etc.
3 Packing material & Accessories
4 Main PWB unit
5 Display PWB unit
6 Power supply PWB unit
7 Noise filter PWB unit
8 Pop-up PWB unit
9 Articles for consumption
10 Service route options & Service tools
11 AC cord
■ Index

Because parts marked with "⚠" is indispensable for the machine safety maintenance and operation, it must be replaced with the parts specific to the product specification.

Table of destinations

SELECTION CODE	COUNTRIES
U	U. S. A., Guam
A	Canada
TS	Germany
TQ	SEEG territory other than Germany (Stamp : English)
TR	SEEG territory other than Germany (Stamp : Spanish)
KB	U. Kingdom
KA	Australia

SELECTION CODE	COUNTRIES
K	Korea

SELECTION CODE	COUNTRIES
SB	Saudi Arabia (127V area)
SBA	Saudi Arabia (220V area)
SC	Taiwan
SD	Venezuela
SE	Hong Kong
SG	Lebanon, Syria, Greece, Pakistan, Iran, Egypt, Thailand, Iraq, Mauritius, Seychelles, Tahiti, Jordan, Sudan, Turkey
SH	South Africa (U. S. A. version)
SHE	South Africa (Europe version)
SJ	Philippines (Europe version)
SJ2	Philippines (U. S. A. version)
SM	Kuwait, Qatar, Oman, UAE, Malta, Bahrain
SMT	Nigeria, Yemen, Kenya

SELECTION CODE	COUNTRIES
RA1	Morocco, Algeria, Tunisia, West Africa
RA2	Chile, Uruguay, Peru, Argentina, Paraguay
RA5	Sri Lanka

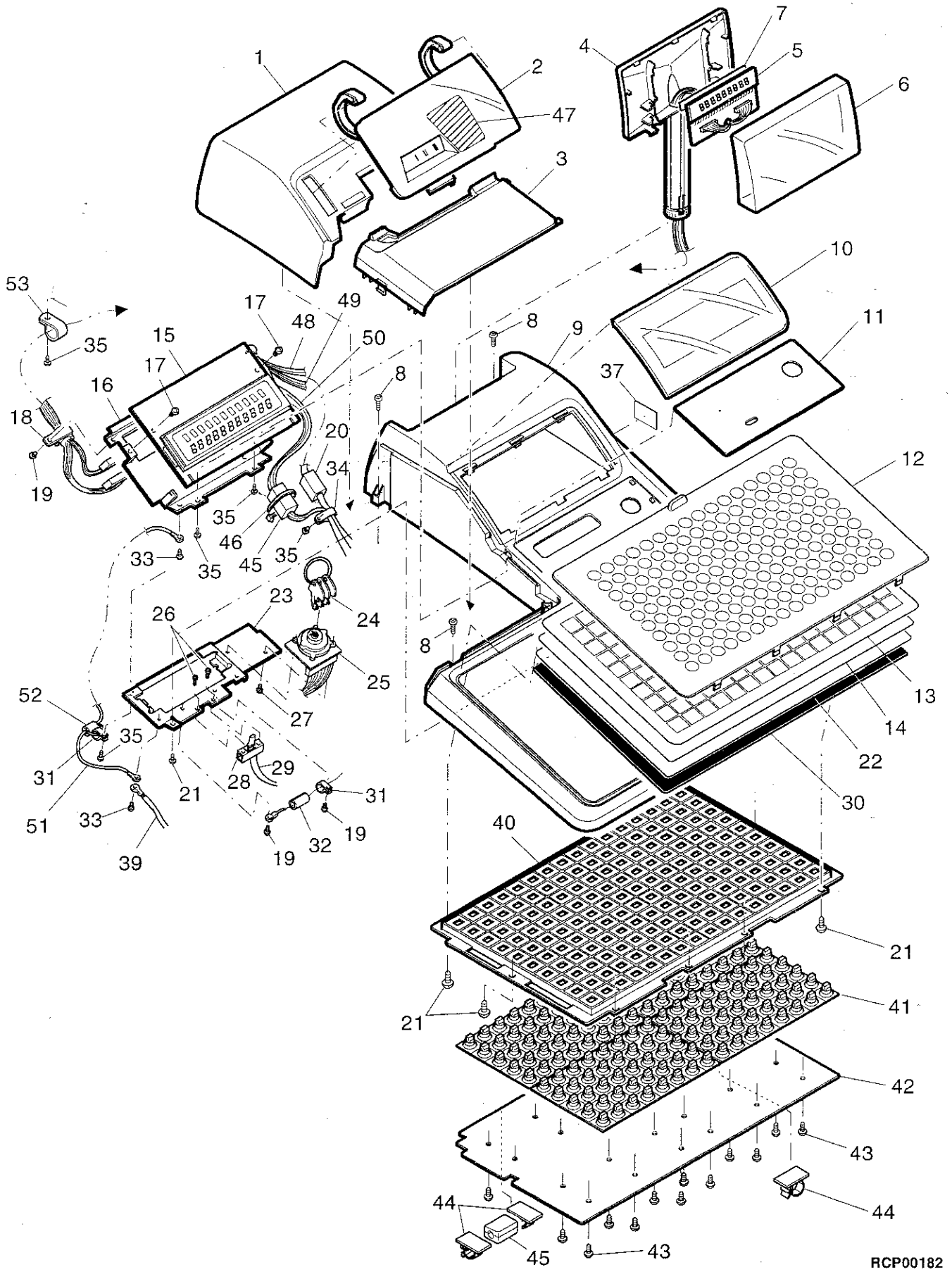
SELECTION CODE	COUNTRIES
RB3	Indonesia
RB4	
RB5	Cyprus
RB6	Panama
RB7	Barbados
RB8	Malaysia (U. S. A. version)

SELECTION CODE	COUNTRIES
RC1	Malaysia (Europe version)
RC2	Singapore
RC5	Dominican Republic, Ecuador

1 Top cabinet etc.

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
1	CCŌVA7038RC06	AW	N	D	Printer cover unit (Include No.1,47)
2	PFiLW6925RCZZ	AK		D	Journal filter
3	GCŌVA7039RCSA	AM		D	Ribbon cover
4	GCAB-7143RCZZ	AH		D	Pop-up cabinet
5	CPWBF7136RC01	BD		E	Pop-up PWB unit
6	PFiLW6923RCSD	AF		D	Pop-up filter
7	PSPAG6703RCZZ	AB		C	Display spacer
8	XBBSC30P06000	AA		C	Screw (3×6)
9	CCABB7141RC08	BA	N	D	Top cabinet unit (Include No.10,11)
10	PFiLW6924RCSD	AM		D	Display filter
11	HPNLC6818RCSG	AK	N	D	Mode switch panel
12	GCŌVB7041RCZZ	AY		D	Flat key cover A
13	PSHEK6796RCZZ	AK		C	Key sheet(Standard character)
14	PSHEK6804RCZZ	AD		C	Key sheet(Programing character)
15	CPWBF7316RC01	BY		E	Display PWB unit
16	LANGT7505RCZZ	AM		C	Display PWB angle
17	LX-BZ6665RCZZ	AA		C	Screw (3×6)
18	RCŌRF6683RCZZ	AM		C	Core (TECK-251512)
19	XHBSD30P08000	AA		C	Screw (3×8)
20	RCŌRF1016LCZZ	AL		C	Core (SFC-5)
21	XEBSD30P06000	AA		C	Screw (3×6)
22	PSHEK6777RCZZ	AC		C	Blank key sheet
23	LANGT7465RCZZ	AK		C	Switch angle
24	LKGiM7110RCZZ	AG		B	Master key (MA)
	LKGiM7111RCZZ	AG		B	Operator key (OP)
	LKGiM7129RCZZ	AE		B	Sub master key (OP key only)
25	LKGiW7256RCZZ	AP		B	Mode key switch (Body)
26	XBPSD26P04K00	AA		C	Screw (M2.6×4)
27	XUPSD23P08000	AA		C	Screw (2.3×8)
28	CSW-S6850RC01	AH		B	Slide switch unit
29	QCNW-7434RCZZ	AC		C	Harness (2pin)
30	GCŌVB7042RCZZ	AW		D	Flat key cover B
31	LHLDW0024SCZZ	AA		C	Wire holder (HP-2N)
32	RCŌRF6654RCZZ	AH		C	Core (5-28-8-F)
33	LX-BZ6774RCZZ	AA		C	Screw (4×6S)
34	LHLDW0004SCZZ	AB		C	Wire clamp (HP-6N)
35	XEBSD30P08000	AA		C	Screw (3×8)
37	TCAUS6668RCZZ	AA		D	Caution label
39	QCNW-7120RCZZ	AE		C	Earth wire (Keyboard↔Printer angle)
40	0AL101KFG-001	AV		C	Housing (101KFG-001-90R)
41	0AL421KFG-001	BB		C	Rubber sheet (421KFG-001-90R)
42	0AL9090E1002R	BK		E	Keyboard PWB ass'y
43	0ALZD2006-670	AA		C	Screw (Z-D2006-670)
44	LHLDW5034BCZZ	AB		C	Wire holder (CKN-10)
45	RCŌRF6662RCZZ	AK		C	Core (SFC-6)
46	LBNDJ2004SCZZ	AA		C	Wire band (PLT-1.5I)
47	PFiLW6926RCZZ	AD		D	Clear filter
48	QCNW-7599RCZZ	AK		C	Key cable 2 (9pin)
49	QCNW-7616RCZZ	AK		C	Key-display cable (7pin)
50	QCNW-7615RCZZ	AT		C	Display cable
51	QCNW-7000RC18	AC		C	Earth wire
52	RCŌRF6684RCZZ	AG		C	Core (TR-16-8-16M)
53	LHLDW0008SCZZ	AA		C	Cable holder (HP-5N)
101	0ALW-P9002-01	AC		B	Connector (W-P9002#01)(2pin)
102	0ALW-P9003-01	AC		C	Connector (W-P9003#01)(3pin)
103	0ALW-P9003-50	AC		C	Connector (3pin)
104	0ALW-P5107-51	AC		C	Connector (7pin)
105	0ALW-P5109-51	AC		C	Connector (9pin)
106	0ALZZ052001138	AQ		B	IC (LS138)(Z-0520-00138)
107	0ALZY0360087 4	AH		B	IC (HC153)
108	RMPTC0473QCKB	AD		B	Block resistor
109	0ALZW8AA473DJ	AA		C	Resistor (47KΩ)(Z-08AA-473DJ#01)
110	0ALZV12CK104E	AD		C	Capacitor (0.1μF)(Z-V12CK104EMSR#1)
111	VHDDSS133//-1	AA		B	Diode (DSS133)
112	VRD-HT2EY472J	AA		C	Resistor (1/4W 4.7KΩ ±5%)
113	VCEAGU1CW336M	AA		C	Capacitor (16WV 33μF)
501	DUNTK9161RCZZ	BL		E	Keyboard unit(flat type) (Include No.40~43,101~113)

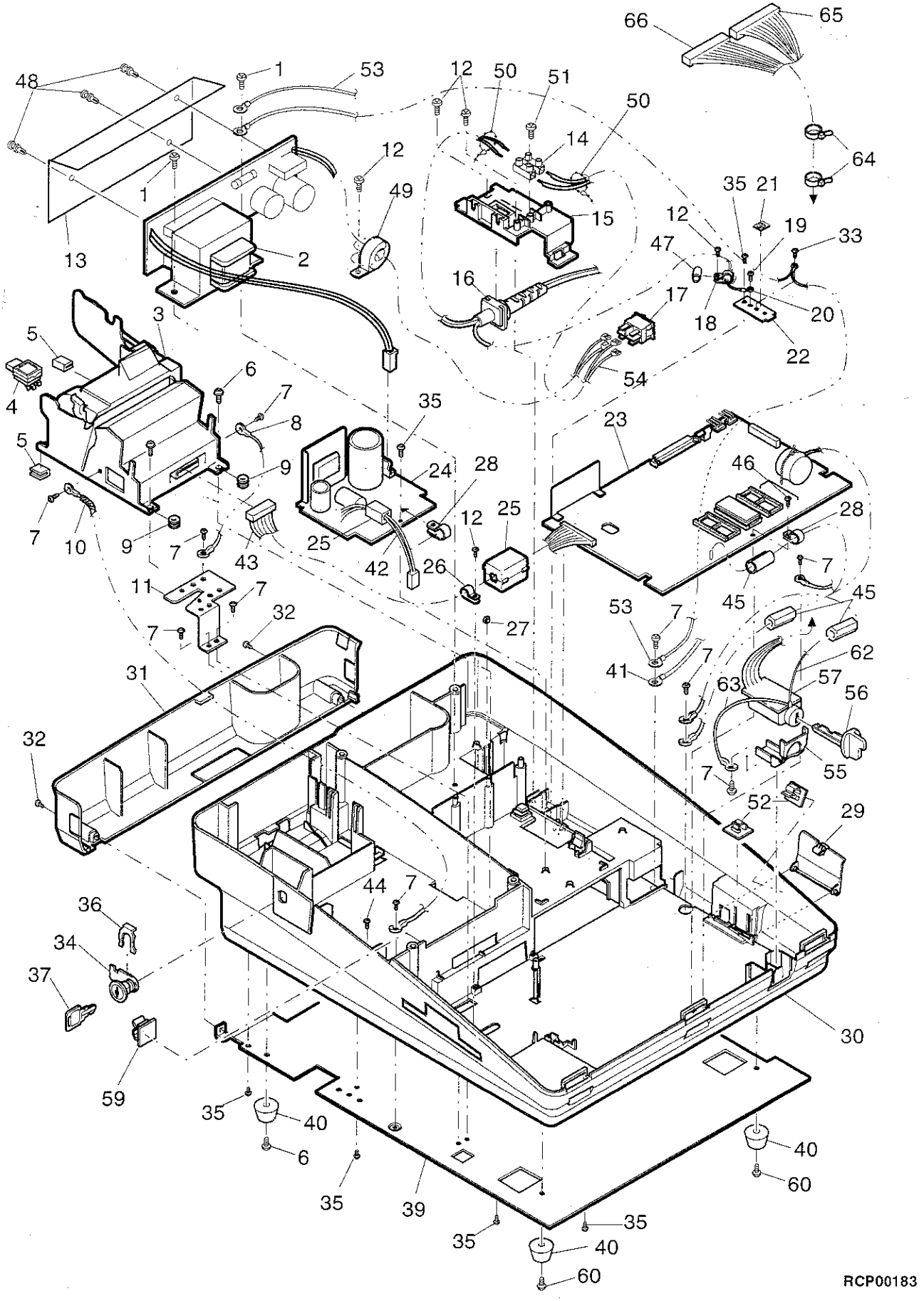
1 Top cabinet etc.



[2] Bottom cabinet etc.

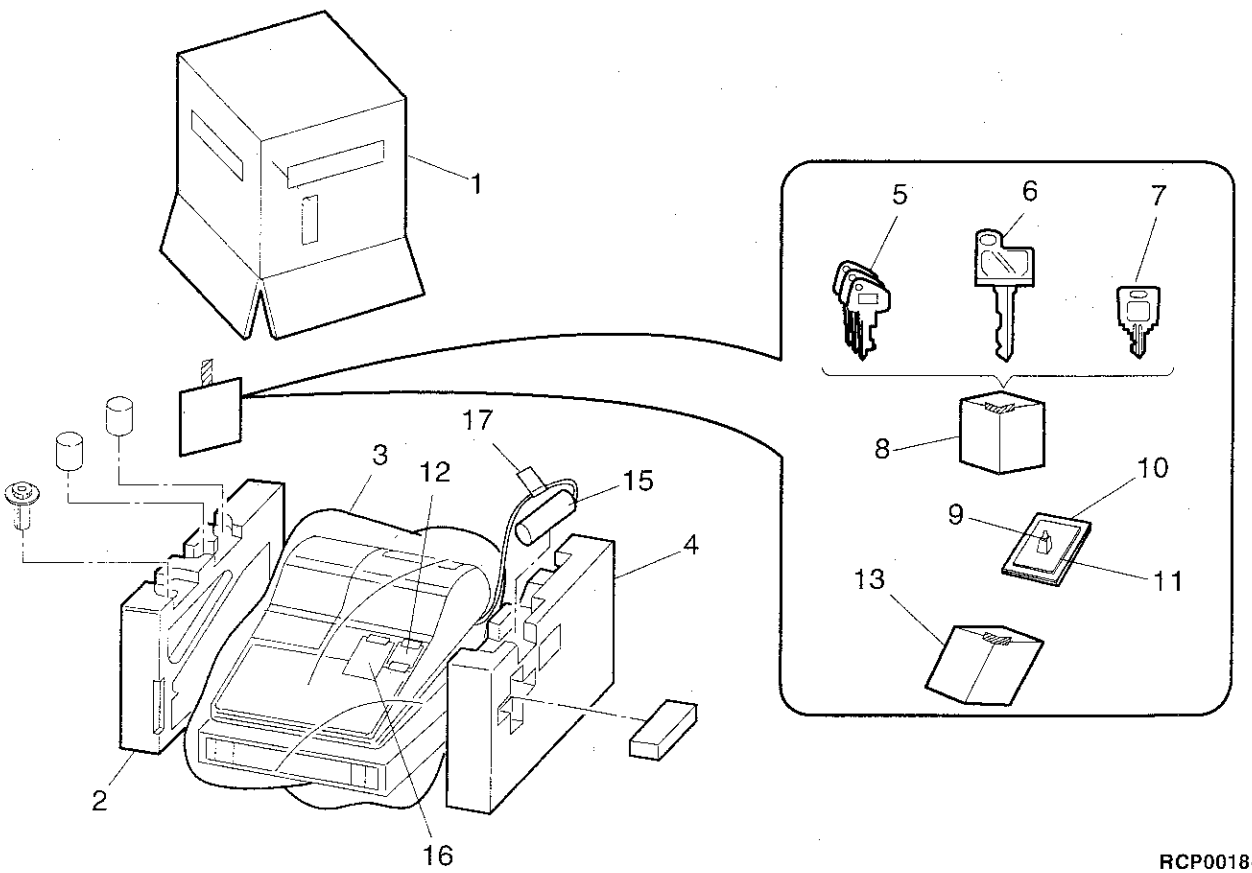
NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	
1	XUBSD40P08000	AA		C	Screw (4×8)	
2	CPWBF7288RC06	BK	N	E	Noise filter PWB unit	[TQ,TR,TS]
	CPWBF7288RC07	BK	N	E	Noise filter PWB unit	[KA,KB]
3	Ki−ÖB6753RCZZ	CB		B	Printer (M−820)	
4	PSTM−6780RC01	AR		C	Stamp	[KA,KB,TQ]
	PSTM−6782RCZZ	AS		C	Stamp	[TR]
	PSTM−6785RC01	AS		C	Stamp	[TS]
5	PGUMM6699RCZZ	AB		C	Printer cushion	
6	XCPSD30P12X00	AA		C	Screw (3×12X)	
7	LX−BZ6774RCZZ	AA		C	Screw (4×6S)	
8	QCNW−7125RCZZ	AD		C	GND wire 3	
9	PCUSG1220CCZZ	AB		C	Printer cushion	
10	QCNW−7122RCZZ	AD		C	Earth wire	
11	LANGQ7476RCZA	AF	N	C	Printer eath angle	
12	XEBSD30P08000	AA		C	Screw (3×8)	[KA,KB]
13	PSHEP6789RCZZ	AG		C	N/F protection sheet	
14	QTANN6629RCZZ	AF		C	Block terminal (TYP500)	
15	LHLDK6813RCSA	AE		C	PS holder	
⚠ 16	QACCL7421QCZZ	AS		B	AC cord (7.5A)	[KA]
⚠	QCNW−7212RCZZ	AH		B	BS ordiary cable	[KB]
⚠	QPLGA0006QCZZ	AQ		C	Plug (3A 250V)	[KB]
⚠	QACCE3120QCN5	AL		B	AC cord (250V 2.5A)	[TQ,TR,TS]
17	QSW−C9212QCZZ	AH		B	Seesaw switch	
18	LHLDW0007SCZZ	AA		C	Wire holder (HP−7N)	[KA,KB]
19	XBPBZ40P06K00	AA		C	Screw (4×6K)	[KA,KB]
20	QTANP0004HCZZ	AB		C	Lug terminal (4φ)	[KA,KB]
21	TLAB−4681CCZZ	AA		D	Earth mark label (Export)	[KA,KB]
22	LANGQ7472RCZZ	AE		C	Main earth angle	[KA,KB]
23	CPWBX7315RC02	CD	N	E	Main PWB unit	
24	CPWBF7289RC07	BL	N	E	Power supply PWB unit	
25	RCÖRF6666RCZZ	AM		C	Core (SFC−8)	
26	LHLDW0008SCZZ	AA		C	Cable holder (HP−5N)	
27	XNESD30−24000	AA		C	Nut (3NS)	
28	LHLDW0024SCZZ	AA		C	Wire holder (HP−2N)	
29	GFTAS6769RCSA	AC		D	SIO connecter lid	
30	GCABA7142RCAB	BD	N	D	Bottom cabinet	
31	GCÖVA7040RCSA	AQ		D	Rear cover	
32	XBBSC30P20000	AA		C	Screw (3×20)	
33	LX−BZ6774RCZZ	AA		C	Screw (4×6S)	[KA,KB]
34	LKGiW2363RCZZ	AL		B	Lock key (body)	
35	XEBSD30P06000	AA		C	Screw (3×6)	
36	MSPRK6660RCZZ	AC		C	Lock spring	
37	LKGiM6784RCZZ	AD		B	Printer cover key (1PC)	
39	LCHSM6692RCZZ	AV		C	Main chassis	
40	GLEGG6653RCZZ	AD		D	Rubber foot	
41	QCNW−7592RCZZ	AD		C	Earth wire G/Y	[KA,KB]
42	QCNW−7575RCZZ	AE		C	PS cable (2pin)	
43	QCNW−7518RCZZ	AR		C	Printer cable	
44	XBPSD30P06KS0	AA		C	Screw (M3×6)	
45	RCÖRF6661RCZZ	AK		C	Core (SFC−4)	
46	XUBSD30P10000	AC		C	Screw (3×10)	
47	RCÖRF6682RCZZ	AE		C	Core	[KA,KB]
48	LBSHZ2021HCZZ	AA		C	Bushing (NRP−232)	
49	RCÖRF7001SCZZ	AL		C	Core (ESD−R−25DR)	
50	LBNDJ0004UCZZ	AA		C	Band	
51	XUPSD30P16000	AA		C	Screw (3×16)	
52	LHLDW2341RCZZ	AB		C	Cable clamp (CKN−05)	
53	QCNW−7590RCZZ	AC		C	Earth wire	[TQ,TR,TS]
54	QCNW−7591RCZZ	AE		C	Shield cable	
55	HDECB6828RCZZ	AG		C	Clerk deco. panel	
56	LKGiM7340RCZZ	AX		B	Clerk key 1(with cap)	
	LKGiM7341RCZZ	AX		B	Clerk key 2(with cap)	
	LKGiM7342RCZZ	AX		B	Clerk key 3(with cap)	
	LKGiM7343RCZZ	AX		B	Clerk key 4(with cap)	
	LKGiM7344RCZZ	AX		B	Clerk key 5(with cap)	
	LKGiM7345RCZZ	AX		B	Clerk key 6(with cap)	
57	LKGiW7339RCZZ	BB		B	Clerk key(body)	
59	LHLDW5034BCZZ	AB		C	Wire holder (CKN−10)	
60	LX−BZ6754RCZZ	AA		C	Screw (M3×8)	
62	QCNW−7642RCZZ	AC		C	GND wire 3	
63	QCNW−7644RCZZ	AB		C	Earth wire 4	
64	LBNDJ0013FCZZ	AA		C	Band	
65	QCNW−7062RCZZ	AQ		C	Connector cable (3P)	
66	QCNW−7063RCZZ	AQ		C	Connector cable (2P)	

2 Bottom cabinet etc.



3 Packing material & Accessories

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
1	SPAKC8218RCSA	AU	N	D	Packing case
2	SPAKA8216RCZA	AQ	N	D	Packing cushion(Right)
3	SSAKA2012KCZZ	AF		D	Vinyl bag
4	SPAKA8217RCZA	AQ	N	D	Packing cushion(Left)
5	LKGiM7110RCZZ	AG		B	Master key (MA)
	LKGiM7111RCZZ	AG		B	Operator key (OP)
	LKGiM7129RCZZ	AE		B	Sub master key (OP key only)
6	LKGiM7340RCZZ	AX		B	Clerk key 1(with cap)
	LKGiM7341RCZZ	AX		B	Clerk key 2(with cap)
	LKGiM7342RCZZ	AX		B	Clerk key 3(with cap)
	LKGiM7343RCZZ	AX		B	Clerk key 4(with cap)
	LKGiM7344RCZZ	AX		B	Clerk key 5(with cap)
	LKGiM7345RCZZ	AX		B	Clerk key 6(with cap)
7	LKGiM6784RCZZ	AD		B	Printer cover key (1PC)
8	SSAKA1221QCZZ	AA		D	Vinyl bag (150×250mm)
9	UiNK-1001CCZZ	AK		S	Ink (5cc)
10	TiNSE7280RCZZ	AW	N	D	Instruction book
	TiNSF7281RCZZ	AW	N	D	Instruction book [TQ,TR,TS]
	TiNSG7282RCZZ	AW	N	D	Instruction book [TQ,TR,TS]
	TiNSS7283RCZZ	AW	N	D	Instruction book [TQ,TR,TS]
11	TCADZ2001QCZA	AE		D	Card [KA]
	TGANE1001QCZA	AC		D	Warranty card [KA]
12	PHŌG-6628RCZZ	AE		C	Protect panel
13	SSAKH3015CCZZ	AA		D	Vinyl bag (200×300mm)
15	SSAKH4231CCZZ	AA		D	Vinyl bag (140×500mm)
16	TCADH6654RCZZ	AB		D	Caution card
17	TCAUS1054CCZZ	AB		D	Caution TAG [KB]
101	UBNDA1008CCZZ	AA		C	AC cord band (120mm)



RCP00184

4 Main PWB unit

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	
1	UBATN2183CCZZ	AV		B	Battery (151FT 3CELL)	[BT2]
2	RALMB6640RCZZ	AF		B	Buzzer (SMX06)	[BZ1]
3	RC-EZ107BRC1A	AH		C	Capacitor (10WV 100μF)	[C2]
4	RC-EZ106ARC1A	AD		C	Capacitor (10WV 10μF)	[C3]
5	RC-EZ106ARC1A	AD		C	Capacitor (10WV 10μF)	[C4]
6	VCEAGA1CW106M	AA		C	Capacitor (16WV 10μF)	[C5]
7	VCQYNA1HM103K	AA		C	Capacitor (50WV 0.010μF)	[C12]
8	RC-EZ685ARC1C	AD		C	Capacitor (16WV 6.8μF)	[C13]
9	RC-EZ106ARC1A	AD		C	Capacitor (10WV 10μF)	[C15]
10	VCEAGA1CW106M	AA		C	Capacitor (16WV 10μF)	[C16]
11	RC-EZ106ARC1A	AD		C	Capacitor (10WV 10μF)	[C17]
12	RC-EZ106ARC1A	AD		C	Capacitor (10WV 10μF)	[C19]
13	VCQYNU1HM683K	AB		C	Capacitor (50WV 0.068μF)	[C20]
14	VCEAGU2AW226M	AB		C	Capacitor (100WV 22μF)	[C21]
15	RC-EZ476ARC1A	AF		C	Capacitor (10WV 47μF)	[C24]
16	VCEAGU2AW106M	AB		C	Capacitor (100WV 10μF)	[C25]
17	VCEAGU1HW227M	AC		C	Capacitor (50WV 220μF)	[C26]
18	VCEAGU1HW477M	AD		C	Capacitor (50WV 470μF)	[C27]
19	VCEAGA1CW106M	AA		C	Capacitor (16WV 10μF)	[C28]
20	RC-EZ476ARC1A	AF		C	Capacitor (10WV 47μF)	[C29]
21	VCEAGU1CW108M	AD		C	Capacitor (16WV 1000μF)	[C30]
22	VCEAGA1HW105M	AB		C	Capacitor (50WV 1μF)	[C31]
23	VCEAGA1CW106M	AA		C	Capacitor (16WV 10μF)	[C32]
24	VCEAGA1CW106M	AA		C	Capacitor (16WV 10μF)	[C33]
25	RC-EZ106ARC1A	AD		C	Capacitor (10WV 10μF)	[C34]
26	RC-EZ476ARC1A	AF		C	Capacitor (10WV 47μF)	[C35]
27	RC-EZ476ARC1A	AF		C	Capacitor (10WV 47μF)	[C36]
28	VCTYPU1EX104M	AB		C	Capacitor (25WV 0.1μF)	[C37]
29	RC-EZ106ARC1A	AD		C	Capacitor (10WV 10μF)	[C38]
30	RC-EZ476ARC1A	AF		C	Capacitor (10WV 47μF)	[C39]
31	VCKYTV1HB102K	AA		C	Capacitor (50WV 1000PF)	[C100]
32	VCKYTV1HB102K	AA		C	Capacitor (50WV 1000PF)	[C101]
33	VCKYTV1HB102K	AA		C	Capacitor (50WV 1000PF)	[C102]
34	VCKYTV1HB102K	AA		C	Capacitor (50WV 1000PF)	[C103]
35	VCCCTV1HH331J	AA		C	Capacitor (50WV 330PF)	[C104]
36	VCCCTV1HH331J	AA		C	Capacitor (50WV 330PF)	[C105]
37	VCCCTV1HH331J	AA		C	Capacitor (50WV 330PF)	[C106]
38	VCKYTV1HF104Z	AA		C	Capacitor (50WV 0.10μF)	[C108]
39	VCKYTV1HB102K	AA		C	Capacitor (50WV 1000PF)	[C109]
40	VCKYTV1HF104Z	AA		C	Capacitor (50WV 0.10μF)	[C110]
41	VCCCTV1HH101J	AA		C	Capacitor (50WV 100PF)	[C111]
42	VCCCTV1HH101J	AA		C	Capacitor (50WV 100PF)	[C112]
43	VCKYTV1HF104Z	AA		C	Capacitor (50WV 0.10μF)	[C113]
44	VCKYTV1HB102K	AA		C	Capacitor (50WV 1000PF)	[C114]
45	VCKYTV1HB102K	AA		C	Capacitor (50WV 1000PF)	[C115]
46	VCCCTV1HH101J	AA		C	Capacitor (50WV 100PF)	[C116]
47	VCCCTV1HH101J	AA		C	Capacitor (50WV 100PF)	[C117]
48	VCCCTV1HH101J	AA		C	Capacitor (50WV 100PF)	[C118]
49	VCCCTV1HH101J	AA		C	Capacitor (50WV 100PF)	[C119]
50	VCCCTV1HH101J	AA		C	Capacitor (50WV 100PF)	[C120]
51	VCCCTV1HH101J	AA		C	Capacitor (50WV 100PF)	[C123]
52	VCCCTV1HH101J	AA		C	Capacitor (50WV 100PF)	[C124]
53	VCCCTV1HH101J	AA		C	Capacitor (50WV 100PF)	[C125]
54	VCCCTV1HH101J	AA		C	Capacitor (50WV 100PF)	[C126]
55	VCCCTV1HH101J	AA		C	Capacitor (50WV 100PF)	[C127]
56	VCCCTV1HH101J	AA		C	Capacitor (50WV 100PF)	[C128]
57	VCCCTV1HH101J	AA		C	Capacitor (50WV 100PF)	[C129]
58	VCCCTV1HH101J	AA		C	Capacitor (50WV 100PF)	[C130]
59	VCCCTV1HH101J	AA		C	Capacitor (50WV 100PF)	[C131]
60	VCCCTV1HH101J	AA		C	Capacitor (50WV 100PF)	[C132]
61	VCKYTV1HB102K	AA		C	Capacitor (50WV 1000PF)	[C136]
62	VCCCTV1HH101J	AA		C	Capacitor (50WV 100PF)	[C137]
63	VCCCTV1HH101J	AA		C	Capacitor (50WV 100PF)	[C138]
64	VCCCTV1HH101J	AA		C	Capacitor (50WV 100PF)	[C139]
65	VCCCTV1HH101J	AA		C	Capacitor (50WV 100PF)	[C140]
66	VCCCTV1HH101J	AA		C	Capacitor (50WV 100PF)	[C141]
67	VCCCTV1HH101J	AA		C	Capacitor (50WV 100PF)	[C142]
68	VCCCTV1HH101J	AA		C	Capacitor (50WV 100PF)	[C143]
69	VCCCTV1HH101J	AA		C	Capacitor (50WV 100PF)	[C144]
70	VCKYTV1HB102K	AA		C	Capacitor (50WV 1000PF)	[C145]
71	VCKYTV1HF104Z	AA		C	Capacitor (50WV 0.10μF)	[C147]
72	VCCCTV1HH470J	AA		C	Capacitor (50WV 47PF)	[C148]
73	VCCCTV1HH101J	AA		C	Capacitor (50WV 100PF)	[C150]
74	VCCCTV1HH470J	AA		C	Capacitor (50WV 47PF)	[C151]
75	VCCCTV1HH470J	AA		C	Capacitor (50WV 47PF)	[C152]
76	VCKYTV1HF104Z	AA		C	Capacitor (50WV 0.10μF)	[C154]
77	VCCCTV1HH101J	AA		C	Capacitor (50WV 100PF)	[C156]
78	VCCCTV1HH101J	AA		C	Capacitor (50WV 100PF)	[C157]
79	VCCCTV1HH101J	AA		C	Capacitor (50WV 100PF)	[C158]
80	VCCCTV1HH331J	AA		C	Capacitor (50WV 330PF)	[C161]

4 Main PWB unit

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	
81	VCCCTV1HH331J	AA		C	Capacitor (50WV 330PF)	[C162]
82	VCKYTV1HF104Z	AA		C	Capacitor (50WV 0.10μF)	[C163]
83	VCCCTV1HH331J	AA		C	Capacitor (50WV 330PF)	[C164]
84	VCCCTV1HH101J	AA		C	Capacitor (50WV 100PF)	[C166]
85	VCKYTV1HB103K	AB		C	Capacitor (50WV 0.010μF)	[C167]
86	VCCCTV1HH331J	AA		C	Capacitor (50WV 330PF)	[C168]
87	VCCCTV1HH331J	AA		C	Capacitor (50WV 330PF)	[C169]
88	VCKYTV1HF104Z	AA		C	Capacitor (50WV 0.10μF)	[C183]
89	VCKYTV1HF104Z	AA		C	Capacitor (50WV 0.10μF)	[C184]
90	VCKYTV1HF104Z	AA		C	Capacitor (50WV 0.10μF)	[C185]
91	VCCCTV1HH470J	AA		C	Capacitor (50WV 47PF)	[C186]
92	VCKYTV1HB102K	AA		C	Capacitor (50WV 1000PF)	[C187]
93	VCKYTV1HB102K	AA		C	Capacitor (50WV 1000PF)	[C188]
94	VCKYTV1HF104Z	AA		C	Capacitor (50WV 0.10μF)	[C190]
95	VCKYTV1HF104Z	AA		C	Capacitor (50WV 0.10μF)	[C191]
96	VCCCTV1HH331J	AA		C	Capacitor (50WV 330PF)	[C192]
97	VCKYTV1HB102K	AA		C	Capacitor (50WV 1000PF)	[C193]
98	VCKYTV1HB102K	AA		C	Capacitor (50WV 1000PF)	[C195]
99	VCKYTV1HB152K	AA		C	Capacitor (50WV 1500PF)	[C196]
100	VCCCTV1HH101J	AA		C	Capacitor (50WV 100PF)	[C198]
101	VCCCTV1HH101J	AA		C	Capacitor (50WV 100PF)	[C199]
102	VCCCTV1HH101J	AA		C	Capacitor (50WV 100PF)	[C200]
103	VCCCTV1HH101J	AA		C	Capacitor (50WV 100PF)	[C201]
104	VCCCTV1HH331J	AA		C	Capacitor (50WV 330PF)	[C202]
105	VCCCTV1HH470J	AA		C	Capacitor (50WV 47PF)	[C208]
106	VCCCTV1HH101J	AA		C	Capacitor (50WV 100PF)	[C210]
107	VCCCTV1HH470J	AA		C	Capacitor (50WV 47PF)	[C211]
108	VCCCTV1HH101J	AA		C	Capacitor (50WV 100PF)	[C212]
109	VCCCTV1HH101J	AA		C	Capacitor (50WV 100PF)	[C213]
110	VCCCTV1HH101J	AA		C	Capacitor (50WV 100PF)	[C214]
111	VCCCTV1HH101J	AA		C	Capacitor (50WV 100PF)	[C215]
112	VCCCTV1HH331J	AA		C	Capacitor (50WV 330PF)	[C216]
113	VCCCTV1HH331J	AA		C	Capacitor (50WV 330PF)	[C217]
114	VCCCTV1HH331J	AA		C	Capacitor (50WV 330PF)	[C218]
115	VCCCTV1HH331J	AA		C	Capacitor (50WV 330PF)	[C219]
116	VCCCTV1HH470J	AA		C	Capacitor (50WV 47PF)	[C220]
117	VCKYTV1HF104Z	AA		C	Capacitor (50WV 0.10μF)	[C222]
118	VCCCTV1HH470J	AA		C	Capacitor (50WV 47PF)	[C223]
119	VCKYTV1HF104Z	AA		C	Capacitor (50WV 0.10μF)	[C224]
120	VCCCTV1HH331J	AA		C	Capacitor (50WV 330PF)	[C225]
121	VCCCTV1HH221J	AA		C	Capacitor (50WV 220PF)	[C226]
122	VCCCTV1HH470J	AA		C	Capacitor (50WV 47PF)	[C228]
123	VCCCTV1HH470J	AA		C	Capacitor (50WV 47PF)	[C229]
124	VCCCTV1HH470J	AA		C	Capacitor (50WV 47PF)	[C230]
125	VCCCTV1HH101J	AA		C	Capacitor (50WV 100PF)	[C231]
126	VCCCTV1HH101J	AA		C	Capacitor (50WV 100PF)	[C232]
127	VCKYTV1HF104Z	AA		C	Capacitor (50WV 0.10μF)	[C233]
128	VCCCTV1HH470J	AA		C	Capacitor (50WV 47PF)	[C238]
129	VCCCTV1HH470J	AA		C	Capacitor (50WV 47PF)	[C239]
130	VCKYTV1HF104Z	AA		C	Capacitor (50WV 0.10μF)	[C240]
131	VCKYTV1HF104Z	AA		C	Capacitor (50WV 0.10μF)	[C241]
132	VCCCTV1HH331J	AA		C	Capacitor (50WV 330PF)	[C250]
133	VCCCTV1HH331J	AA		C	Capacitor (50WV 330PF)	[C251]
134	VCCCTV1HH331J	AA		C	Capacitor (50WV 330PF)	[C252]
135	VCCCTV1HH331J	AA		C	Capacitor (50WV 330PF)	[C253]
136	VCKYTV1HF104Z	AA		C	Capacitor (50WV 0.10μF)	[C254]
137	VCCCTV1HH470J	AA		C	Capacitor (50WV 47PF)	[C255]
138	VCCCTV1HH331J	AA		C	Capacitor (50WV 330PF)	[C256]
139	VCKYTV1HF104Z	AA		C	Capacitor (50WV 0.10μF)	[C259]
140	VCKYTV1HF104Z	AA		C	Capacitor (50WV 0.10μF)	[C261]
141	VCKYTV1HB103K	AB		C	Capacitor (50WV 0.010μF)	[C262]
142	VCCCTV1HH101J	AA		C	Capacitor (50WV 100PF)	[C263]
143	VCCCTV1HH470J	AA		C	Capacitor (50WV 47PF)	[C264]
144	VCKYTV1HF104Z	AA		C	Capacitor (50WV 0.10μF)	[C265]
145	VCKYTV1HB102K	AA		C	Capacitor (50WV 1000PF)	[C266]
146	VCCCTV1HH331J	AA		C	Capacitor (50WV 330PF)	[C267]
147	VCCCTV1HH331J	AA		C	Capacitor (50WV 330PF)	[C268]
148	VCCCTV1HH331J	AA		C	Capacitor (50WV 330PF)	[C269]
149	VCCCTV1HH331J	AA		C	Capacitor (50WV 330PF)	[C270]
150	VCCCTV1HH470J	AA		C	Capacitor (50WV 47PF)	[C271]
151	VCKYTV1HB102K	AA		C	Capacitor (50WV 1000PF)	[C272]
152	VCKYTV1HB102K	AA		C	Capacitor (50WV 1000PF)	[C273]
153	VCKYTV1HB102K	AA		C	Capacitor (50WV 1000PF)	[C274]
154	VCCCTV1HH331J	AA		C	Capacitor (50WV 330PF)	[C276]
155	VCCCTV1HH331J	AA		C	Capacitor (50WV 330PF)	[C277]
156	VCKYTV1HB102K	AA		C	Capacitor (50WV 1000PF)	[C278]
157	VCKYTV1HB102K	AA		C	Capacitor (50WV 1000PF)	[C280]
158	VCKYTV1HB102K	AA		C	Capacitor (50WV 1000PF)	[C281]
159	VCKYTV1HF104Z	AA		C	Capacitor (50WV 0.10μF)	[C282]
160	VCKYTV1HF104Z	AA		C	Capacitor (50WV 0.10μF)	[C283]

4 Main PWB unit

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	
161	VCKYTV1HF104Z	AA		C	Capacitor (50WV 0.10μF)	[C284]
162	VHECRDE562/-1	AE		B	Zener diode (CRDE562)	[D1]
163	VHD1SS353//-1	AB		B	Diode (1SS353)	[D100]
164	VHDSFPB54//-1	AC		B	Diode (SFPB54)	[D101]
165	VHDSFPB54//-1	AC		B	Diode (SFPB54)	[D102]
166	VHD1SS353//-1	AB		B	Diode (1SS353)	[D103]
167	VHD1SS353//-1	AB		B	Diode (1SS353)	[D104]
168	VHD1SS353//-1	AB		B	Diode (1SS353)	[D107]
169	VHDSFPL52V/-1	AC		B	Diode (SFPL52V)	[D110]
170	VHD1SS353//-1	AB		B	Diode (1SS353)	[D111]
171	VHDSFPL52V/-1	AC		B	Diode (SFPL52V)	[D112]
172	VHD1SS353//-1	AB		B	Diode (1SS353)	[D113]
173	VHD1SS353//-1	AB		B	Diode (1SS353)	[D114]
174	VHD1SS353//-1	AB		B	Diode (1SS353)	[D115]
175	VHDSFPB54//-1	AC		B	Diode (SFPB54)	[D116]
176	VHD1SS353//-1	AB		B	Diode (1SS353)	[D117]
177	VHD1SS353//-1	AB		B	Diode (1SS353)	[D118]
178	VHD1SS353//-1	AB		B	Diode (1SS353)	[D119]
179	VHD1SS353//-1	AB		B	Diode (1SS353)	[D120]
180	VHD1SS353//-1	AB		B	Diode (1SS353)	[D121]
181	QCNCM6926RC1H	AE		C	Connector (18pin)	[DISPCN]
182	QCNCM5278NCZZ	AC		C	Connector	[DRCN1]
183	QCNCM5278NCZZ	AC		C	Connector	[DRCN2]
184	QCNCM6699RCZZ	AC		B	Connector (3pin)	[DRSP3]
185	QCNCM6699RCZZ	AC		B	Connector (3pin)	[DRSP4]
⚠ 186	QFS-A1037CCZZ	AC		A	Fuse (1.5A)(MINI TYPE)	[F1]
187	QFSHA1002CCZZ	AB		C	Fuse holder (MINI TYPE)	[F1]
⚠ 188	QFS-C4081CCZZ	AF		A	Fuse (250V 2.5A)	[F2]
189	QFSHA1002CCZZ	AB		C	Fuse holder (MINI TYPE)	[F2]
190	RCORF6674RCZZ	AB		C	Beads core (SA39)	[FB1]
191	RCiLZ1003LCZZ	AB		C	Coil (FLDR25C)	[FB3]
192	RCiLZ1003LCZZ	AB		C	Coil (FLDR25C)	[FB4]
193	RCiLZ1003LCZZ	AB		C	Coil (FLDR25C)	[FB5]
194	RCiLZ1003LCZZ	AB		C	Coil (FLDR25C)	[FB6]
195	RCiLZ1003LCZZ	AB		C	Coil (FLDR25C)	[FB7]
196	RCiLZ1003LCZZ	AB		C	Coil (FLDR25C)	[FB9]
197	RCiLZ1003LCZZ	AB		C	Coil (FLDR25C)	[FB10]
198	RCiLZ1003LCZZ	AB		C	Coil (FLDR25C)	[FB11]
199	RCiLZ1003LCZZ	AB		C	Coil (FLDR25C)	[FB12]
200	RCiLZ1003LCZZ	AB		C	Coil (FLDR25C)	[FB13]
201	RCiLZ1003LCZZ	AB		C	Coil (FLDR25C)	[FB14]
202	RCORF6673RCZZ	AB		C	Core (DR35C)	[FB15]
203	RCiLZ1003LCZZ	AB		C	Coil (FLDR25C)	[FB17]
204	RCiLZ1003LCZZ	AB		C	Coil (FLDR25C)	[FB18]
205	RFiLN6014RCZZ	AC		C	Filter (DNF331I)	[FL1]
206	RFiLN6014RCZZ	AC		C	Filter (DNF331I)	[FL2]
207	RFiLN6014RCZZ	AC		C	Filter (DNF331I)	[FL3]
208	RFiLN6014RCZZ	AC		C	Filter (DNF331I)	[FL4]
209	RFiLN6014RCZZ	AC		C	Filter (DNF331I)	[FL5]
210	RFiLN6014RCZZ	AC		C	Filter (DNF331I)	[FL6]
211	RFiLN6014RCZZ	AC		C	Filter (DNF331I)	[FL7]
212	RFiLN6014RCZZ	AC		C	Filter (DNF331I)	[FL8]
213	VHiSN74HC00NS	AC		B	IC (SN74HC00NS)	[IC1]
214	VHiTD62503F-1	AF		B	IC (TD62503F)	[IC7]
215	VHiHM128F12SL	BN		B	IC (HM128F12SL)	[IC10]
216	VHiiR9393N/-1	AD		B	IC (IR9393N)	[IC12]
217	VHiTD62308F-1	AH		B	IC (TD62308F)	[IC13]
218	VHiSN74HC08NS	AD		B	IC (SN74HC08NS)	[IC15]
219	QSOCZ2042SC32	AE		C	IC socket (32pin)	[IC16]
220	VHi27040RAB1A	BK	N	B	IC (27040RAB1A)	[IC16]
221	QSOCZ2042SC32	AE		C	IC socket (32pin)	[IC17]
222	QSOCZ2042SC32	AE		C	IC socket (32pin)	[IC18]
223	VHiF258016PC/	AZ		B	IC (F258016PC)	[IC20]
224	VHiiR9393N/-1	AD		B	IC (IR9393N)	[IC23]
225	VHiSTA401A/-1	AP		B	IC (STA401A)	[IC25]
226	VHiSMA4392/-1	AN		B	IC (SMA4392)	[IC26]
227	VHiMC34063AM1	AG		B	IC (MC34063AM1)	[IC27]
228	VHiH641510810	BA		B	IC (H641510810)	[IC28]
229	VHiTD62308F-1	AH		B	IC (TD62308F)	[IC29]
230	VHiSN74HC14NS	AE		B	IC (SN74HC14NS)	[IC30]
231	VHiSTA401A/-1	AP		B	IC (STA401A)	[IC31]
232	VHiTC7S86F/-1	AD	N	B	IC (TC7S86F)	[IC33]
233	VHiTC7S86F/-1	AD	N	B	IC (TC7S86F)	[IC34]
234	VRD-RC2EY000J	AA		C	Resistor (1/4W 0Ω ±5%)	[JP2]
235	VRD-RC2EY000J	AA		C	Resistor (1/4W 0Ω ±5%)	[JP3]
236	VRS-TS2AD2R2J	AA		C	Resistor (1/10W 2.2Ω ±5%)	[JP100]
237	VRS-TS2AD2R2J	AA		C	Resistor (1/10W 2.2Ω ±5%)	[JP101]
238	VRS-TS2AD2R2J	AA		C	Resistor (1/10W 2.2Ω ±5%)	[JP102]
239	VRS-TS2AD2R2J	AA		C	Resistor (1/10W 2.2Ω ±5%)	[JP103]
240	VRS-TS2AD2R2J	AA		C	Resistor (1/10W 2.2Ω ±5%)	[JP104]

4 Main PWB unit

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	
241	VRS-TS2AD2R2J	AA		C	Resistor (1/10W 2.2Ω ±5%)	[JP105]
242	VRS-TS2AD2R2J	AA		C	Resistor (1/10W 2.2Ω ±5%)	[JP106]
243	RCiLC6633RCTZ	AH		C	Coil (CR-20)	[L2]
244	QCNCM7071RC6H	AN		C	Connector (68pin)	[OPTCN1]
245	QCNCM7071RC6H	AN		C	Connector (68pin)	[OPTCN2]
246	QCNW-7518RCZZ	AR		C	Printer cable	[PRCN]
247	QCNCM1101CCZZ	AB		C	Connector (2pin)	[PSCN]
248	VS2SC4153-/-1	AG		B	Transistor (2SC4153)	[Q4]
249	VS2SC4153-/-1	AG		B	Transistor (2SC4153)	[Q5]
250	VS2SA1036KQRC	AB		B	Transistor (2SA1036KQRC)	[Q100]
251	VS2SC2412K/-1	AB		B	Transistor (2SC2412K)	[Q102]
252	VS2SD1898//-1	AD		B	Transistor (2SD1898)	[Q103]
253	VS2SC2412K/-1	AB		B	Transistor (2SC2412K)	[Q104]
254	VS2SA1036KQRC	AB		B	Transistor (2SA1036KQRC)	[Q105]
255	VRD-RB2HY561J	AA		C	Resistor (1/2W 560Ω ±5%)	[R1]
256	VRD-RC2EY392J	AA		C	Resistor (1/4W 3.9KΩ ±5%)	[R3]
257	VRS-RE3AAR68J	AA		C	Resistor (1W 0.68Ω ±5%)	[R5]
258	VRD-RC2EY392G	AA		C	Resistor (1/4W 3.9KΩ ±2%)	[R6]
259	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R100]
260	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R101]
261	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R102]
262	VRS-TS2AD101J	AA		C	Resistor (1/10W 100Ω ±5%)	[R103]
263	VRS-TS2AD101J	AA		C	Resistor (1/10W 100Ω ±5%)	[R104]
264	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R106]
265	VRS-TS2AD102J	AA		C	Resistor (1/10W 1KΩ ±5%)	[R108]
266	VRS-TS2AD562J	AA		C	Resistor (1/10W 5.6KΩ ±5%)	[R109]
267	VRS-TS2AD391J	AA		C	Resistor (1/10W 390Ω ±5%)	[R110]
268	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R117]
269	VRS-TS2AD134F	AA		C	Resistor (1/10W 130KΩ ±1%)	[R122]
270	VRS-TS2AD223J	AA		C	Resistor (1/10W 22KΩ ±5%)	[R124]
271	VRS-TS2AD202J	AA		C	Resistor (1/10W 2KΩ ±5%)	[R134]
272	VRS-TS2AD623J	AA		C	Resistor (1/10W 62KΩ ±5%)	[R135]
273	VRS-TS2AD332J	AA		C	Resistor (1/10W 3.3KΩ ±5%)	[R136]
274	VRS-TS2AD472J	AA		C	Resistor (1/10W 4.7KΩ ±5%)	[R137]
275	VRS-TS2AD333J	AA		C	Resistor (1/10W 33KΩ ±5%)	[R138]
276	VRS-TS2AD272J	AA		C	Resistor (1/10W 2.7KΩ ±5%)	[R139]
277	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R141]
278	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R144]
279	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R145]
280	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R156]
281	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R157]
282	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R158]
283	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R159]
284	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R161]
285	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R162]
286	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R163]
287	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R164]
288	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R165]
289	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R166]
290	VRS-TS2AD220J	AA		C	Resistor (1/10W 22Ω ±5%)	[R167]
291	VRS-TS2AD101J	AA		C	Resistor (1/10W 100Ω ±5%)	[R168]
292	VRS-TS2AD682J	AA		C	Resistor (1/10W 6.8KΩ ±5%)	[R169]
293	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R170]
294	VRS-TS2AD104J	AA		C	Resistor (1/10W 100KΩ ±5%)	[R171]
295	VRS-TS2AD104J	AA		C	Resistor (1/10W 100KΩ ±5%)	[R172]
296	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R174]
297	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R175]
298	VRS-TS2AD273J	AA		C	Resistor (1/10W 27KΩ ±5%)	[R177]
299	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R180]
300	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R181]
301	VRS-TS2AD104J	AA		C	Resistor (1/10W 100KΩ ±5%)	[R184]
302	VRS-TS2AD102J	AA		C	Resistor (1/10W 1KΩ ±5%)	[R185]
303	VRS-TS2AD272J	AA		C	Resistor (1/10W 2.7KΩ ±5%)	[R186]
304	VRS-TS2AD563J	AA		C	Resistor (1/10W 56KΩ ±5%)	[R187]
305	VRS-TS2AD563J	AA		C	Resistor (1/10W 56KΩ ±5%)	[R188]
306	VRS-TS2AD273J	AA		C	Resistor (1/10W 27KΩ ±5%)	[R191]
307	VRS-TS2AD101J	AA		C	Resistor (1/10W 100Ω ±5%)	[R192]
308	VRS-TS2AD562J	AA		C	Resistor (1/10W 5.6KΩ ±5%)	[R193]
309	VRS-TS2AD101J	AA		C	Resistor (1/10W 100Ω ±5%)	[R194]
310	VRS-TS2AD562J	AA		C	Resistor (1/10W 5.6KΩ ±5%)	[R195]
311	VRS-TS2AD102J	AA		C	Resistor (1/10W 1KΩ ±5%)	[R196]
312	VRS-TS2AD102J	AA		C	Resistor (1/10W 1KΩ ±5%)	[R197]
313	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R198]
314	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R199]
315	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R200]
316	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R201]
317	VRS-TS2AD182G	AA		C	Resistor (1/10W 1.8KΩ ±2%)	[R203]
318	VRS-TS2AD102G	AA		C	Resistor (1/10W 1.0KΩ ±2%)	[R204]
319	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R205]
320	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R209]

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NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	
321	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R211]
322	VRS-TS2AD101J	AA		C	Resistor (1/10W 100Ω ±5%)	[R212]
323	VRS-TS2AD101J	AA		C	Resistor (1/10W 100Ω ±5%)	[R213]
324	VRS-TS2AD101J	AA		C	Resistor (1/10W 100Ω ±5%)	[R214]
325	VRS-TS2AD101J	AA		C	Resistor (1/10W 100Ω ±5%)	[R215]
326	VRS-TS2AD101J	AA		C	Resistor (1/10W 100Ω ±5%)	[R216]
327	VRS-TS2AD101J	AA		C	Resistor (1/10W 100Ω ±5%)	[R217]
328	VRS-TS2AD101J	AA		C	Resistor (1/10W 100Ω ±5%)	[R218]
329	VRS-TS2AD101J	AA		C	Resistor (1/10W 100Ω ±5%)	[R219]
330	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R220]
331	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R221]
332	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R222]
333	VRS-TS2AD100J	AA		C	Resistor (1/10W 10Ω ±5%)	[R224]
334	VRS-TS2AD102J	AA		C	Resistor (1/10W 1KΩ ±5%)	[R225]
335	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R227]
336	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R228]
337	RCŌRF1008ACZZ	AB		C	Core (BLM21A05)	[R229]
338	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R230]
339	RCŌRF1008ACZZ	AB		C	Core (BLM21A05)	[R231]
340	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R232]
341	VRS-TS2AD362F	AA		C	Resistor (1/10W 3.6KΩ ±1%)	[R233]
342	VRS-TS2AD122F	AA		C	Resistor (1/10W 1.2KΩ ±1%)	[R234]
343	VRS-TS2AD472G	AA		C	Resistor (1/10W 4.7KΩ ±2%)	[R235]
344	VRS-TS2AD912G	AA		C	Resistor (1/10W 9.1KΩ ±2%)	[R236]
345	VRS-TS2AD912G	AA		C	Resistor (1/10W 9.1KΩ ±2%)	[R237]
346	VRS-TS2AD102J	AA		C	Resistor (1/10W 1KΩ ±5%)	[R238]
347	VRS-TS2AD102J	AA		C	Resistor (1/10W 1KΩ ±5%)	[R239]
348	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R240]
349	VRS-TS2AD102J	AA		C	Resistor (1/10W 1KΩ ±5%)	[R241]
350	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R242]
351	VRS-TS2AD102J	AA		C	Resistor (1/10W 1KΩ ±5%)	[R243]
352	VRS-TS2AD472J	AA		C	Resistor (1/10W 4.7KΩ ±5%)	[R244]
353	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R245]
354	VRS-TS2AD472J	AA		C	Resistor (1/10W 4.7KΩ ±5%)	[R246]
355	VRS-TS2AD472J	AA		C	Resistor (1/10W 4.7KΩ ±5%)	[R247]
356	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R248]
357	VRS-TS2AD102J	AA		C	Resistor (1/10W 1KΩ ±5%)	[R249]
358	VRS-TS2AD102J	AA		C	Resistor (1/10W 1KΩ ±5%)	[R250]
359	VRS-TS2AD102J	AA		C	Resistor (1/10W 1KΩ ±5%)	[R251]
360	VRS-TS2AD102J	AA		C	Resistor (1/10W 1KΩ ±5%)	[R252]
361	VRS-TS2AD102J	AA		C	Resistor (1/10W 1KΩ ±5%)	[R253]
362	VRS-TS2AD472J	AA		C	Resistor (1/10W 4.7KΩ ±5%)	[R254]
363	RCŌRF1008ACZZ	AB		C	Core (BLM21A05)	[R255]
364	VRS-TS2AD122F	AA		C	Resistor (1/10W 1.2KΩ ±1%)	[R256]
365	VRS-TS2AD103F	AA		C	Resistor (1/10W 10KΩ ±1%)	[R257]
366	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R258]
367	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R259]
368	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R260]
369	VRS-TS2AD473J	AA		C	Resistor (1/10W 47KΩ ±5%)	[R261]
370	VRS-TS2AD102J	AA		C	Resistor (1/10W 1KΩ ±5%)	[R262]
371	VRS-TS2AD472J	AA		C	Resistor (1/10W 4.7KΩ ±5%)	[R263]
372	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R265]
373	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R266]
374	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R267]
375	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R268]
376	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R269]
377	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R270]
378	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R271]
379	VRS-TS2AD622J	AA		C	Resistor (1/10W 6.2KΩ ±5%)	[R272]
380	VRS-TS2AD622J	AA		C	Resistor (1/10W 6.2KΩ ±5%)	[R275]
381	VRS-TS2AD472J	AA		C	Resistor (1/10W 4.7KΩ ±5%)	[R276]
382	VRS-TS2AD102J	AA		C	Resistor (1/10W 1KΩ ±5%)	[R279]
383	VRS-TS2AD102J	AA		C	Resistor (1/10W 1KΩ ±5%)	[R280]
384	VRS-TS2AD472J	AA		C	Resistor (1/10W 4.7KΩ ±5%)	[R281]
385	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R283]
386	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R284]
387	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R285]
388	VRS-TS2AD472J	AA		C	Resistor (1/10W 4.7KΩ ±5%)	[R286]
389	VRS-TS2AD333J	AA		C	Resistor (1/10W 33KΩ ±5%)	[R287]
390	VRS-TS2AD203J	AA		C	Resistor (1/10W 20KΩ ±5%)	[R288]
391	VRS-TS2AD330J	AA		C	Resistor (1/10W 33Ω ±5%)	[R289]
392	VRS-TS2AD221J	AA		C	Resistor (1/10W 220Ω ±5%)	[R290]
393	RMPTC8103QCKB	AD		B	Block resistor (10KΩ×8 1/8W ±10%)	[RA1]
394	RMPTC8103QCKB	AD		B	Block resistor (10KΩ×8 1/8W ±10%)	[RA2]
395	RMPTC8103QCKB	AD		B	Block resistor (10KΩ×8 1/8W ±10%)	[RA3]
396	RMPTC6103QCKB	AC		B	Block resistor (10KΩ×6 1/8W ±10%)	[RA4]
397	RMPTC8103QCKB	AD		B	Block resistor (10KΩ×8 1/8W ±10%)	[RA8]
398	QCNCW7086RC5J	AK		C	Connector (50pin)	[RAMCN]
399	VHSDRA2TE//-1	AG		B	Thyristor (DRA2TE)	[SD1]
400	QCNCW1084ACZZ	AG		C	Connector (9pin)	[SIOCN]

4 Main PWB unit

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	
401	QCNCM6865RC2J	AD		C	Connector (20pin)	[SLIPCN1]
402	QCNCM2379RC0E	AC		C	Connector (5pin)	[SLIPCN2]
403	QCNCM1060AC03	AB		C	Connector (3pin)	[SW2]
404	QCNCW1057ACZZ	AB		C	Connector (Short socket)	[SW2]
405	RTRNH6783RCZZ	AN		B	Converter transformer	[T1]
406	VRD-RC2EY000J	AA		C	Resistor (1/4W 0Ω ±5%)	[TP4]
407	RVR-M2517QCZZ	AE		B	Variable resistor (200KΩ)	[VR2]
408	RCRSP6664RCZZ	AF		B	Crystal (19.66MHz)	[X1]
409	VHERD4.3MB1-1	AC		B	Zener diode (RD4.3MB1)	[ZD100]
410	VHERD6.2MB1-1	AC		B	Zener diode (RD6.2MB1)	[ZD101]
411	VHERD4.3MB1-1	AC		B	Zener diode (RD4.3MB1)	[ZD103]
412	VHERD5.6PB/-1	AD		B	Zener diode (RD5.6PB)	[ZD104]
413	LBNDJ0004UCZZ	AA		C	Band	
414	LX-BZ6665RCZZ	AA		C	Screw (3×6)	
415	PRDAF6650RCZB	AG		C	Heat sink	
416	QCNW-7124RCZZ	AB		C	GND wire 2 (To switch angle)	
417	XBSSD30P08000	AA		C	Screw (3×8)	
418	XNESD30-24000	AA		C	Nut (3NS)	
	(Unit)					
901	CPWBX7315RC02	CD	N	E	Main PWB unit	

5 Display PWB unit

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	
1	PSPAG6723RCZZ	AF		C	Display spacer	
2	QCNCM6865RC0T	AC		C	Connector (9pin)	
3	QCNCM6865RC1A	AD		C	Connector (11pin)	
4	QCNW-7599RCZZ	AK		C	Key cable 2 (9pin)	[KEY CN2]
5	QCNW-7615RCZZ	AT		C	Display cable	
6	QCNW-7616RCZZ	AK		C	Key-display cable (7pin)	[KEY CN1]
7	RC-EZ106ARC1A	AD		C	Capacitor (10WV 10μF)	[C11,15,22,25]
8	RC-KZ1054CCZZ	AB		C	Capacitor (50WV 0.1μF)	
9	RCORF2029SCZZ	AC		C	Core	
10	RCRSP6658RCZZ	AE		B	Crystal (32.768KHz)	[X1]
11	RCRSZ6644RCZZ	AD		B	Crystal (4.19MHz)	[X2]
12	RMPTC7104QCKB	AC		B	Block Resistor (100KΩ×7 1/4W ±10%)	[BR1~3]
13	RMPTE4471RCHZ	AD		B	Capacitor array (470pF×4)	[BC1]
14	RMPTN8202QCJJ	AK		B	Block resistor (2KΩ×8)	[BR4]
15	VCCCPU1HH101J	AB		C	Capacitor (50WV 100PF)	[C20]
16	VCCCPU1HH150J	AA		C	Capacitor (50WV 15PF)	[C13,14]
17	VCEAEU1CW106M	AA		C	Capacitor (16WV 10μF)	[C17]
18	VCKYPU1HB102K	AA		C	Capacitor (50WV 0.001μF)	
19	VCKYPU1HB471K	AA		C	Capacitor (50WV 470PF)	[C3,4,5,6,7,23,24]
20	VCTYPU1NX104M	AB		C	Capacitor (12WV 0.1μF)	
21	VCTYPU1EX223M	AB		C	Capacitor (25WV 0.022μF)	[C9]
22	VHDEK04////-1	AD		B	Diode (EK04)	[D2]
23	VHERD39EB7/-1	AB		B	Zener diode (RD39EB7)	[ZD1]
24	VHiH4728A75FS	AX		B	IC (H4728A75FS)	[IC1]
25	VHiM66004FP-1	AY		B	IC (M66004FP)	[IC2]
26	VRD-RC2EY105J	AA		C	Resistor (1/4W 1.0MΩ ±5%)	[R9]
27	VRD-RC2EY202J	AA		C	Resistor (1/4W 2.0KΩ ±5%)	[R17,18,19]
28	VRD-RC2EY221J	AA		C	Resistor (1/4W 220Ω ±5%)	[R8]
29	VRD-RC2EY273G	AA		C	Resistor (1/4W 27KΩ ±2%)	[R12]
30	VRD-RC2EY330J	AA		C	Resistor (1/4W 33Ω ±5%)	[R13,14,15,16]
31	VRD-RC2EY4R7J	AA		C	Resistor (1/4W 4.7Ω ±5%)	[R10,11]
32	VRD-RC2EY472J	AA		C	Resistor (1/4W 4.7KΩ ±5%)	[R3,4]
33	VRD-RC2EY473J	AA		C	Resistor (1/4W 47KΩ ±5%)	[R1,2]
34	VVKCC1040G/-1	BL		B	Display tube	
	(Unit)					
901	CPWBF7316RC01	BY		E	Display PWB unit	

6 Power supply PWB unit

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	
1	LBNDJ0004UCZZ	AA		C	Band	
2	LX-BZ6665RCZZ	AA		C	Screw (3×6)	
3	PRDAF6651RCZA	AG		C	Heat sink	
4	QCNCM1101CCZZ	AB		C	Connector (2pin)	[VIN CN]
5	QCNW-7575RCZZ	AE		C	PS cable (2pin)	[PS CN]
6	QCNW-7640RCZZ	AC		C	GND wire 1	
⚠ 7	QFS-C2521TAZZ	AE		A	Fuse (250V 2.5A)	[F1]
8	QFSHA1002CCZZ	AB		C	Fuse holder (MINI TYPE)	[F1]

6 Power supply PWB unit

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	
9	RC-EZ688NRC1J	AQ		C	Capacitor (63WV 6800μF)	[C1]
10	RCiLC6652RCZZ	AK		C	Coil (MC182-201M)	[L1]
11	RVR-M2415QCN3	AE		B	Variable resistor (CT-6P)	[VR1]
12	VCEAGU1VW228M	AG		C	Capacitor (35WV 2200μF)	[C2]
13	VCQYNA2AM103K	AA		C	Capacitor (100WV 0.010μF)	[C3]
14	VHDDBA20B//-1	AE		B	Diode (DBA20B)	[DB1]
15	VHiSTR2124/-1	AR		B	IC (STR2124)	[IC1]
16	VRD-RC2EY103G	AA		C	Resistor (1/4W 10KΩ ±2%)	[R2]
17	XBPSD30P14KS0	AA		C	Screw (3×14KS)	
18	XNESD30-24000	AA		C	Nut (3NS)	
	(Unit)					
901	CPWBF7289RC07	BL	N	E	Power supply PWB unit	

7 Noise filter PWB unit

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	
1	RC-HZ104AUA2E	AE		C	Capacitor (250WV 0.1μF)	[C1]
2	RC-HZ224AUA2E	AF		C	Capacitor (250WV 0.22μF)	[C2]
3	RCiLC6638RCZZ	AM		C	Coil	[L1]
4	RCiLC6575RCZZ	AN		C	Coil	[L2]
5	VRD-RB2HY394J	AA		C	Resistor (1/2W 390KΩ ±5%)	[R1]
6	QCNW-7356RCZZ	AF		C	PS cable	
⚠ 7	QFS-C1322QCZZ	AE		A	Fuse (250V 1A)	
8	QFSHA1002CCZZ	AB		C	Fuse holder (MINI TYPE)	
⚠ 9	RTRNP9514RCZZ	AZ		B	Power transformer	
	(Unit)					
901	CPWBF7288RC06	BK	N	E	Noise filter PWB unit	[TQ,TR,TS]
	CPWBF7288RC07	BK	N	E	Noise filter PWB unit	[KA,KB]

8 Pop-up PWB unit

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	
1	LBNDJ0004UCZZ	AA		C	Band	
2	QCNCW6918RC09	AH		C	Connector with wires (9pin)	[Pop up CN1]
3	QCNCW6918RC11	AK		C	Connector (11pin)	[Pop up CN2]
4	VVKFiP7B13/-1	AX		B	Display tube (FIP7B13]	
	(Unit)					
901	CPWBF7136RC01	BD		E	Pop-up PWB unit	

9 Articles for consumption

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
1	DPAPR1006CSZZ	AR		S	Roll paper (5rolls/pack)
2	PRBN-6640RCZZ	AX		S	Ribbon cassette
3	UiNK-1001CCZZ	AK		S	Ink for stamp (5cc)
4	PSHEK6804RCZZ	AD		S	Key sheet(Programing character)
5	PSHEK6796RCZZ	AK		S	Key sheet(Standard character)
6	PSHEK6777RCZZ	AC		S	Key sheet(Blank character)

10 Service route options & Service tools

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
1	LKGiM7113RCZZ	AK		B	Service key
2	GCOVB7047RCZZ	BA		S	Drip proof switch cover
3	LKGiM7126RCZZ	AL		S	Mode key grip cover (OP key only)
4	PSHEK6777RCZZ	AC		S	Blank key sheet
5	DKiT-8643RCZZ	BG		S	Journal near end sensor
6	LKGiM7346RCZZ	AX		B	Additional clerk key (Key No.=7)
	LKGiM7347RCZZ	AX		B	Additional clerk key (Key No.=8)
	LKGiM7348RCZZ	AX		B	Additional clerk key (Key No.=9)
	LKGiM7349RCZZ	AX		B	Additional clerk key (Key No.=10)
	LKGiM7350RCZZ	AX		B	Additional clerk key (Key No.=11)
	LKGiM7351RCZZ	AX		B	Additional clerk key (Key No.=12)
	LKGiM7352RCZZ	AX		B	Additional clerk key (Key No.=13)

10 Service route options & Service tools

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
6	LKGiM7353RCZZ	AX		B	Additional clerk key (Key No.=14)
	LKGiM7354RCZZ	AX		B	Additional clerk key (Key No.=15)
7	DKiT-8633RCZZ	BE		S	Drawer fixing kit
8	CKŌG-6708RCZZ	BU		S	Expansion PWB
9	UKŌG-6704RCZZ	AV		S	Sio loop back connector

11 AC CORD

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
1	QACCJ1413QCZZ	AG		B	AC cord Japan, RB6, RB7, RC5, SC, SD
1	QACCA3441QCZZ	AL		B	AC cord SB
2	QACCD8411QCZZ	AN		B	AC cord U. S. A, Canada, Japan (Okinawa), Guam
2	QTANP0004HCZZ	AB		B	Lug terminal U. S. A, Canada
3	QACCE3120QCN5	AP		B	AC cord RA1, RA2, RB3, RB5, SG, TQ, TR, TS, K AC cord Yugoslavia
4	QPLGA4501CCZZ	AK		B	Plug SE
4	QCNW-6629RCZZ	AN		B	AC cord SE
5	QPLGA0018WRE0	AN		B	Plug SH, RA5
5	QCNW-6629RCZZ	AN		B	AC cord SH, RA5, SHE
5	PHOG-1023CCZZ	AB		B	Bushing for AC cord SH, RA5, SHE
6	QACCL1018CCZZ	AS		B	AC cord KA, SL
7	QTANP0004HCZZ	AB		B	Lug terminal RC2, SM, SMT, RC1, SBA, RB8
7	QPLGA0006QCZZ	AN		B	Plug KB, SM, SMT, RC1, SBA, RB8, RC2
7	QCNW-1035CCZZ	AH		B	AC cord KB, RC1, RC2, SM, SMT, SBA
7	QCNW-6629RCZZ	AN		B	AC cord RB8
8	QCNW-6629RCZZ	AN		B	AC cord RB4 (AC cord only. The plug is not included.)
9	QACCZ3423QCZZ	AH		B	AC cord SJ, SJ2

Note : Instead of AC cords QACCZ3421QCZZ/QACCK1008CCZZ, the AC cord QACCE1422QCZZ(No.3) is supllied as service spare part.

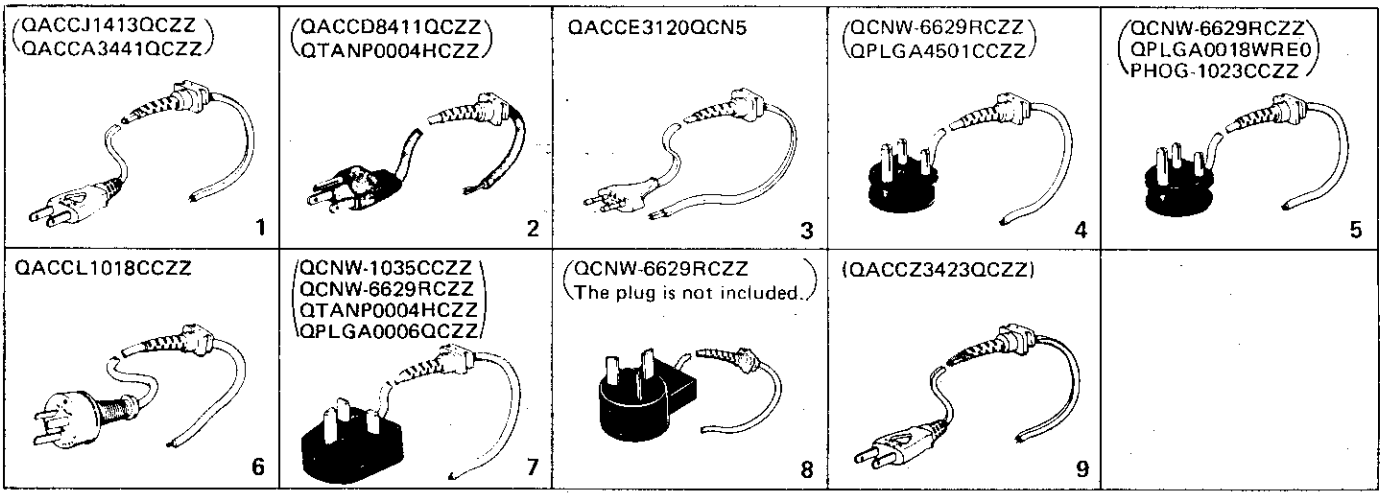

Table of destinations

SELECTION CODE	COUNTRIES
U	U. S. A., Guam
A	Canada
TS	Germany
TQ	SEEG territory other than Germany (Stamp : English)
TR	SEEG territory other than Germany (Stamp : Spanish)
KB	U. Kingdom
KA	Australia

SELECTION CODE	COUNTRIES
K	Korea

SELECTION CODE	COUNTRIES
SB	Saudi Arabia (127V area)
SBA	Saudi Arabia (220V area)
SC	Taiwan
SD	Venezuela
SE	Hong Kong
SG	Lebanon, Syria, Greece, Pakistan, Iran, Egypt, Thailand, Iraq, Mauritius, Seychelles, Tahiti, Jordan, Sudan, Turkey
SH	South Africa (U. S. A. version)
SHE	South Africa (Europe version)
SJ	Philippines (Europe version)
SJ2	Philippines (U. S. A. version)
SM	Kuwait, Qatar, Oman, UAE, Malta, Bahrain
SMT	Nigeria, Yemen, Kenya

SELECTION CODE	COUNTRIES
RA1	Morocco, Algeria, Tunisia, West Africa
RA2	Chile, Uruguay, Peru, Argentina, Paraguay
RA5	Sri Lanka

SELECTION CODE	COUNTRIES
RB3	Indonesia
RB4	
RB5	Cyprus
RB6	Panama
RB7	Barbados
RB8	Malaysia (U. S. A. version)

SELECTION CODE	COUNTRIES
RC1	Malaysia (Europe version)
RC2	Singapore
RC5	Dominican Republic, Ecuador

■ Index

PARTS CODE	NO.	PRICE RANK	NEW MARK	PART RANK	
〔C〕					
CCABB7141RC08	1- 9	BA	N	D	
CCŌVA7038RC06	1- 1	AW	N	D	
CKŌG-6708RCZZ	10- 8	BU		S	
CPWBF7136RC01	1- 5	BD		E	
〃	8-901	BD		E	
CPWBF7288RC06	2- 2	BK	N	E	
〃	7-901	BK	N	E	
CPWBF7288RC07	2- 2	BK	N	E	
〃	7-901	BK	N	E	
CPWBF7289RC07	2- 24	BL	N	E	
〃	6-901	BL	N	E	
CPWBF7316RC01	1- 15	BY		E	
〃	5-901	BY		E	
CPWBX7315RC02	2- 23	CD	N	E	
〃	4-901	CD	N	E	
CSW-S6850RC01	1- 28	AH		B	
〔D〕					
DKiT-8633RCZZ	10- 7	BE		S	
DKiT-8643RCZZ	10- 5	BG		S	
DPAPR1006CSZZ	9- 1	AR		S	
DUNTK9161RCZZ	1-501	BL		E	
〔G〕					
GCAB-7143RCZZ	1- 4	AH		D	
GCABA7142RCAB	2- 30	BD	N	D	
GCŌVA7039RCSA	1- 3	AM		D	
GCŌVA7040RCSA	2- 31	AQ		D	
GCŌVB7041RCZZ	1- 12	AY		D	
GCŌVB7042RCZZ	1- 30	AW		D	
GCŌVB7047RCZZ	10- 2	BA		S	
GFTAS6769RCSA	2- 29	AC		D	
GLEGG6653RCZZ	2- 40	AD		D	
〔H〕					
HDECB6828RCZZ	2- 55	AG		C	
HPNLC6818RCSG	1- 11	AK	N	D	
〔K〕					
Ki-ŌB6753RCZZ	2- 3	CB		B	
〔L〕					
LANGQ7472RCZZ	2- 22	AE		C	
LANGQ7476RCZA	2- 11	AF	N	C	
LANGT7465RCZZ	1- 23	AK		C	
LANGT7505RCZZ	1- 16	AM		C	
LBNDJ0004UCZZ	2- 50	AA		C	
〃	4-413	AA		C	
〃	6- 1	AA		C	
〃	8- 1	AA		C	
LBNDJ0013FCZZ	2- 64	AA		C	
LBNDJ2004SCZZ	1- 46	AA		C	
LBSHZ2021HCZZ	2- 48	AA		C	
LCHSM6692RCZZ	2- 39	AV		C	
LHLDK6813RCSA	2- 15	AE		C	
LHLDW0004SCZZ	1- 34	AB		C	
LHLDW0007SCZZ	2- 18	AA		C	
LHLDW0008SCZZ	1- 53	AA		C	
〃	2- 26	AA		C	
LHLDW0024SCZZ	1- 31	AA		C	
〃	2- 28	AA		C	
LHLDW2341RCZZ	2- 52	AB		C	
LHLDW5034BCZZ	1- 44	AB		C	
〃	2- 59	AB		C	
LKGiM6784RCZZ	2- 37	AD		B	
〃	3- 7	AD		B	
LKGiM7110RCZZ	1- 24	AG		B	
〃	3- 5	AG		B	
LKGiM7111RCZZ	1- 24	AG		B	
〃	3- 5	AG		B	
LKGiM7113RCZZ	10- 1	AK		B	
LKGiM7126RCZZ	10- 3	AL		S	
LKGiM7129RCZZ	1- 24	AE		B	
〃	3- 5	AE		B	
LKGiM7340RCZZ	2- 56	AX		B	
〃	3- 6	AX		B	
LKGiM7341RCZZ	2- 56	AX		B	
〃	3- 6	AX		B	
LKGiM7342RCZZ	2- 56	AX		B	
〃	3- 6	AX		B	
LKGiM7343RCZZ	2- 56	AX		B	
〃	3- 6	AX		B	
LKGiM7344RCZZ	2- 56	AX		B	
〃	3- 6	AX		B	

PARTS CODE	NO.	PRICE RANK	NEW MARK	PART RANK	
LKGiM7345RCZZ	2- 56	AX		B	
〃	3- 6	AX		B	
LKGiM7346RCZZ	10- 6	AX		B	
LKGiM7347RCZZ	10- 6	AX		B	
LKGiM7348RCZZ	10- 6	AX		B	
LKGiM7349RCZZ	10- 6	AX		B	
LKGiM7350RCZZ	10- 6	AX		B	
LKGiM7351RCZZ	10- 6	AX		B	
LKGiM7352RCZZ	10- 6	AX		B	
LKGiM7353RCZZ	10- 6	AX		B	
LKGiM7354RCZZ	10- 6	AX		B	
LKGiW2363RCZZ	2- 34	AL		B	
LKGiW7256RCZZ	1- 25	AP		B	
LKGiW7339RCZZ	2- 57	BB		B	
LX-BZ6665RCZZ	1- 17	AA		C	
〃	4-414	AA		C	
〃	6- 2	AA		C	
LX-BZ6754RCZZ	2- 60	AA		C	
LX-BZ6774RCZZ	1- 33	AA		C	
〃	2- 7	AA		C	
〃	2- 33	AA		C	
〔M〕					
MSPRK6660RCZZ	2- 36	AC		C	
〔P〕					
PCUSG1220CCZZ	2- 9	AB		C	
PFiLW6923RCSD	1- 6	AF		D	
PFiLW6924RCSD	1- 10	AM		D	
PFiLW6925RCZZ	1- 2	AK		D	
PFiLW6926RCZZ	1- 47	AD		D	
PGUMM6699RCZZ	2- 5	AB		C	
PHŌG-6628RCZZ	3- 12	AE		C	
PRBN-6640RCZZ	9- 2	AX		S	
PRDAF6650RCZB	4-415	AG		C	
PRDAF6651RCZA	6- 3	AG		C	
PSHEK6777RCZZ	1- 22	AC		C	
〃	9- 6	AC		S	
〃	10- 4	AC		S	
PSHEK6796RCZZ	1- 13	AK		C	
〃	9- 5	AK		S	
PSHEK6804RCZZ	1- 14	AD		C	
〃	9- 4	AD		S	
PSHEP6789RCZZ	2- 13	AG		C	
PSPAG6703RCZZ	1- 7	AB		C	
PSPAG6723RCZZ	5- 1	AF		C	
PSTM-6780RC01	2- 4	AR		C	
PSTM-6782RCZZ	2- 4	AS		C	
PSTM-6785RC01	2- 4	AS		C	
〔Q〕					
QACCE3120QCN5	2- 16	AL		B	
QACCL7421QCZZ	2- 16	AS		B	
QCNCM1060AC03	4-403	AB		C	
QCNCM1101CCZZ	4-247	AB		C	
〃	6- 4	AB		C	
QCNCM2379RC0E	4-402	AC		C	
QCNCM5278NCZZ	4-182	AC		C	
〃	4-183	AC		C	
QCNCM6699RCZZ	4-184	AC		B	
〃	4-185	AC		B	
QCNCM6865RC0i	5- 2	AC		C	
QCNCM6865RC1A	5- 3	AD		C	
QCNCM6865RC2J	4-401	AD		C	
QCNCM6926RC1H	4-181	AE		C	
QCNCM7071RC6H	4-244	AN		C	
〃	4-245	AN		C	
QCNCW1057ACZZ	4-404	AB		C	
QCNCW1084ACZZ	4-400	AG		C	
QCNCW6918RC09	8- 2	AH		C	
QCNCW6918RC11	8- 3	AK		C	
QCNCW7086RC5J	4-398	AK		C	
QCNW-7000RC18	1- 51	AC		C	
QCNW-7062RCZZ	2- 65	AQ		C	
QCNW-7063RCZZ	2- 66	AQ		C	
QCNW-7120RCZZ	1- 39	AE		C	
QCNW-7122RCZZ	2- 10	AD		C	
QCNW-7124RCZZ	4-416	AB		C	
QCNW-7125RCZZ	2- 8	AD		C	
QCNW-7212RCZZ	2- 16	AH		B	
QCNW-7356RCZZ	7- 6	AF		C	
QCNW-7434RCZZ	1- 29	AC		C	
QCNW-7518RCZZ	2- 43	AR		C	

PARTS CODE	NO.	PRICE RANK	NEW MARK	PART RANK	
QCNW-7518RCZZ	4- 246	AR		C	
QCNW-7575RCZZ	2- 42	AE		C	
//	6- 5	AE		C	
QCNW-7590RCZZ	2- 53	AC		C	
QCNW-7591RCZZ	2- 54	AE		C	
QCNW-7592RCZZ	2- 41	AD		C	
QCNW-7599RCZZ	1- 48	AK		C	
//	5- 4	AK		C	
QCNW-7615RCZZ	1- 50	AT		C	
//	5- 5	AT		C	
QCNW-7616RCZZ	1- 49	AK		C	
//	5- 6	AK		C	
QCNW-7640RCZZ	6- 6	AC		C	
QCNW-7642RCZZ	2- 62	AC		C	
QCNW-7644RCZZ	2- 63	AB		C	
QFS-A1037CCZZ	4- 186	AC		A	
QFS-C1322QCZZ	7- 7	AE		A	
QFS-C2521TAZZ	6- 7	AE		A	
QFS-C4081CCZZ	4- 188	AF		A	
QFSHA1002CCZZ	4- 187	AB		C	
//	4- 189	AB		C	
//	6- 8	AB		C	
//	7- 8	AB		C	
QPLGA0006QCZZ	2- 16	AQ		C	
QSOCZ2042SC32	4- 219	AE		C	
//	4- 221	AE		C	
//	4- 222	AE		C	
QSW-C9212QCZZ	2- 17	AH		B	
QTANN6629RCZZ	2- 14	AE		C	
QTANP0004HCZZ	2- 20	AB		C	
〔R〕					
RALMB6640RCZZ	4- 2	AF		B	
RC-EZ106ARC1A	4- 4	AD		C	
//	4- 5	AD		C	
//	4- 9	AD		C	
//	4- 11	AD		C	
//	4- 12	AD		C	
//	4- 25	AD		C	
//	4- 29	AD		C	
//	5- 7	AD		C	
RC-EZ107BRC1A	4- 3	AH		C	
RC-EZ476ARC1A	4- 15	AF		C	
//	4- 20	AF		C	
//	4- 26	AF		C	
//	4- 27	AF		C	
//	4- 30	AF		C	
RC-EZ685ARC1C	4- 8	AD		C	
RC-EZ688NRC1J	6- 9	AQ		C	
RC-HZ104AUA2E	7- 1	AE		C	
RC-HZ224AUA2E	7- 2	AF		C	
RC-KZ1054CCZZ	5- 8	AB		C	
RCiLC6575RCZZ	7- 4	AN		C	
RCiLC6633RCTZ	4- 243	AH		C	
RCiLC6638RCZZ	7- 3	AM		C	
RCiLC6652RCZZ	6- 10	AK		C	
RCiLZ1003LCZZ	4- 191	AB		C	
//	4- 192	AB		C	
//	4- 193	AB		C	
//	4- 194	AB		C	
//	4- 195	AB		C	
//	4- 196	AB		C	
//	4- 197	AB		C	
//	4- 198	AB		C	
//	4- 199	AB		C	
//	4- 200	AB		C	
//	4- 201	AB		C	
//	4- 203	AB		C	
//	4- 204	AB		C	
RCORF1008ACZZ	4- 337	AB		C	
//	4- 339	AB		C	
//	4- 363	AB		C	
RCORF1016LCZZ	1- 20	AL		C	
RCORF2029SCZZ	5- 9	AC		C	
RCORF6654RCZZ	1- 32	AH		C	
RCORF6661RCZZ	2- 45	AK		C	
RCORF6662RCZZ	1- 45	AK		C	
RCORF6666RCZZ	2- 25	AM		C	
RCORF6673RCZZ	4- 202	AB		C	
RCORF6674RCZZ	4- 190	AB		C	
RCORF6682RCZZ	2- 47	AE		C	

PARTS CODE	NO.	PRICE RANK	NEW MARK	PART RANK	
RCORF6683RCZZ	1- 18	AM		C	
RCORF6684RCZZ	1- 52	AG		C	
RCORF7001SCZZ	2- 49	AL		C	
RCRSP6658RCZZ	5- 10	AE		B	
RCRSP6664RCZZ	4- 408	AF		B	
RCRSZ6644RCZZ	5- 11	AD		B	
RFiLN6014RCZZ	4- 205	AC		C	
//	4- 206	AC		C	
//	4- 207	AC		C	
//	4- 208	AC		C	
//	4- 209	AC		C	
//	4- 210	AC		C	
//	4- 211	AC		C	
//	4- 212	AC		C	
RMPTC0473QCKB	1- 108	AD		B	
RMPTC6103QCKB	4- 396	AC		B	
RMPTC7104QCKB	5- 12	AC		B	
RMPTC8103QCKB	4- 393	AD		B	
//	4- 394	AD		B	
//	4- 395	AD		B	
//	4- 397	AD		B	
RMPTE4471RCHZ	5- 13	AD		B	
RMPTN8202QCJJ	5- 14	AK		B	
RTRNH6783RCZZ	4- 405	AN		B	
RTRNP9514RCZZ	7- 9	AZ		B	
RVR-M2415QCN3	6- 11	AE		B	
RVR-M2517QCZZ	4- 407	AE		B	
〔S〕					
SPAKA8216RCZA	3- 2	AQ	N	D	
SPAKA8217RCZA	3- 4	AQ	N	D	
SPAKC8218RCSA	3- 1	AU	N	D	
SSAKA1221QCZZ	3- 8	AA		D	
SSAKA2012KCZZ	3- 3	AF		D	
SSAKH3015CCZZ	3- 13	AA		D	
SSAKH4231CCZZ	3- 15	AA		D	
〔T〕					
TCADH6654RCZZ	3- 16	AB		D	
TCADZ2001QCZA	3- 11	AE		D	
TCAUS1054CCZZ	3- 17	AB		D	
TCAUS6668RCZZ	1- 37	AA		D	
TGANE1001QCZA	3- 11	AC		D	
TiNSE7280RCZZ	3- 10	AW	N	D	
TiNSF7281RCZZ	3- 10	AW	N	D	
TiNSG7282RCZZ	3- 10	AW	N	D	
TiNSS7283RCZZ	3- 10	AW	N	D	
TLAB-4681CCZZ	2- 21	AA		D	
〔U〕					
UBATN2183CCZZ	4- 1	AV		B	
UBNDA1008CCZZ	3- 101	AA		C	
UiNK-1001CCZZ	3- 9	AK		S	
//	9- 3	AK		S	
UKOG-6704RCZZ	10- 9	AV		S	
〔V〕					
VCCCPU1HH101J	5- 15	AB		C	
VCCCPU1HH150J	5- 16	AA		C	
VCCCTV1HH101J	4- 41	AA		C	
//	4- 42	AA		C	
//	4- 46	AA		C	
//	4- 47	AA		C	
//	4- 48	AA		C	
//	4- 49	AA		C	
//	4- 50	AA		C	
//	4- 51	AA		C	
//	4- 52	AA		C	
//	4- 53	AA		C	
//	4- 54	AA		C	
//	4- 55	AA		C	
//	4- 56	AA		C	
//	4- 57	AA		C	
//	4- 58	AA		C	
//	4- 59	AA		C	
//	4- 60	AA		C	
//	4- 62	AA		C	
//	4- 63	AA		C	
//	4- 64	AA		C	
//	4- 65	AA		C	
//	4- 66	AA		C	
//	4- 67	AA		C	
//	4- 68	AA		C	
//	4- 69	AA		C	

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PARTS CODE	NO.	PRICE RANK	NEW MARK	PART RANK	
VCCCTV1HH101J	4- 73	AA		C	
//	4- 77	AA		C	
//	4- 78	AA		C	
//	4- 79	AA		C	
//	4- 84	AA		C	
//	4- 100	AA		C	
//	4- 101	AA		C	
//	4- 102	AA		C	
//	4- 103	AA		C	
//	4- 106	AA		C	
//	4- 108	AA		C	
//	4- 109	AA		C	
//	4- 110	AA		C	
//	4- 111	AA		C	
//	4- 125	AA		C	
//	4- 126	AA		C	
//	4- 142	AA		C	
VCCCTV1HH221J	4- 121	AA		C	
VCCCTV1HH331J	4- 35	AA		C	
//	4- 36	AA		C	
//	4- 37	AA		C	
//	4- 80	AA		C	
//	4- 81	AA		C	
//	4- 83	AA		C	
//	4- 86	AA		C	
//	4- 87	AA		C	
//	4- 96	AA		C	
//	4- 104	AA		C	
//	4- 112	AA		C	
//	4- 113	AA		C	
//	4- 114	AA		C	
//	4- 115	AA		C	
//	4- 120	AA		C	
//	4- 132	AA		C	
//	4- 133	AA		C	
//	4- 134	AA		C	
//	4- 135	AA		C	
//	4- 138	AA		C	
//	4- 146	AA		C	
//	4- 147	AA		C	
//	4- 148	AA		C	
//	4- 149	AA		C	
//	4- 154	AA		C	
//	4- 155	AA		C	
VCCCTV1HH470J	4- 72	AA		C	
//	4- 74	AA		C	
//	4- 75	AA		C	
//	4- 91	AA		C	
//	4- 105	AA		C	
//	4- 107	AA		C	
//	4- 116	AA		C	
//	4- 118	AA		C	
//	4- 122	AA		C	
//	4- 123	AA		C	
//	4- 124	AA		C	
//	4- 128	AA		C	
//	4- 129	AA		C	
//	4- 137	AA		C	
//	4- 143	AA		C	
//	4- 150	AA		C	
VCEAEU1CW106M	5- 17	AA		C	
VCEAGA1CW106M	4- 6	AA		C	
//	4- 10	AA		C	
//	4- 19	AA		C	
//	4- 23	AA		C	
//	4- 24	AA		C	
VCEAGA1HW105M	4- 22	AB		C	
VCEAGU1CW108M	4- 21	AD		C	
VCEAGU1CW336M	1- 113	AA		C	
VCEAGU1HW227M	4- 17	AC		C	
VCEAGU1HW477M	4- 18	AD		C	
VCEAGU1VW228M	6- 12	AG		C	
VCEAGU2AW106M	4- 16	AB		C	
VCEAGU2AW226M	4- 14	AB		C	
VCKYPU1HB102K	5- 18	AA		C	
VCKYPU1HB471K	5- 19	AA		C	
VCKYTV1HB102K	4- 31	AA		C	
//	4- 32	AA		C	
//	4- 33	AA		C	
//	4- 34	AA		C	

PARTS CODE	NO.	PRICE RANK	NEW MARK	PART RANK	
VCKYTV1HB102K	4- 39	AA		C	
//	4- 44	AA		C	
//	4- 45	AA		C	
//	4- 61	AA		C	
//	4- 70	AA		C	
//	4- 92	AA		C	
//	4- 93	AA		C	
//	4- 97	AA		C	
//	4- 98	AA		C	
//	4- 145	AA		C	
//	4- 151	AA		C	
//	4- 152	AA		C	
//	4- 153	AA		C	
//	4- 156	AA		C	
//	4- 157	AA		C	
//	4- 158	AA		C	
VCKYTV1HB103K	4- 85	AB		C	
//	4- 141	AB		C	
VCKYTV1HB152K	4- 99	AA		C	
VCKYTV1HF104Z	4- 38	AA		C	
//	4- 40	AA		C	
//	4- 43	AA		C	
//	4- 71	AA		C	
//	4- 76	AA		C	
//	4- 82	AA		C	
//	4- 88	AA		C	
//	4- 89	AA		C	
//	4- 90	AA		C	
//	4- 94	AA		C	
//	4- 95	AA		C	
//	4- 117	AA		C	
//	4- 119	AA		C	
//	4- 127	AA		C	
//	4- 130	AA		C	
//	4- 131	AA		C	
//	4- 136	AA		C	
//	4- 139	AA		C	
//	4- 140	AA		C	
//	4- 144	AA		C	
//	4- 159	AA		C	
//	4- 160	AA		C	
//	4- 161	AA		C	
VCQYNA1HM103K	4- 7	AA		C	
VCQYNA2AM103K	6- 13	AA		C	
VCQYNU1HM683K	4- 13	AB		C	
VCTYPU1EX104M	4- 28	AB		C	
VCTYPU1EX223M	5- 21	AB		C	
VCTYPU1NX104M	5- 20	AB		C	
VHDDBA20B//-1	6- 14	AE		B	
VHDDSS133//-1	1- 111	AA		B	
VHDEK04////-1	5- 22	AD		B	
VHDSFPB54//-1	4- 164	AC		B	
//	4- 165	AC		B	
//	4- 175	AC		B	
VHDSFPL52V/-1	4- 169	AC		B	
//	4- 171	AC		B	
VHD1SS353//-1	4- 163	AB		B	
//	4- 166	AB		B	
//	4- 167	AB		B	
//	4- 168	AB		B	
//	4- 170	AB		B	
//	4- 172	AB		B	
//	4- 173	AB		B	
//	4- 174	AB		B	
//	4- 176	AB		B	
//	4- 177	AB		B	
//	4- 178	AB		B	
//	4- 179	AB		B	
//	4- 180	AB		B	
VHECRDE562/-1	4- 162	AE		B	
VHERD39EB7/-1	5- 23	AB		B	
VHERD4.3MB1-1	4- 409	AC		B	
//	4- 411	AC		B	
VHERD5.6PB/-1	4- 412	AD		B	
VHERD6.2MB1-1	4- 410	AC		B	
VHiF258016PC/	4- 223	AZ		B	
VHiHM128F12SL	4- 215	BN		B	
VHiH4728A75FS	5- 24	AX		B	
VHiH641510810	4- 228	BA		B	
VHiiR9393N/-1	4- 216	AD		B	

PARTS CODE	NO.	PRICE RANK	NEW MARK	PART RANK	
VHiiR9393N/-1	4- 224	AD		B	
VHiMC34063AM1	4- 227	AG		B	
VHiM66004FP-1	5- 25	AY		B	
VHiSMA4392/-1	4- 226	AN		B	
VHiSN74HC00NS	4- 213	AC		B	
VHiSN74HC08NS	4- 218	AD		B	
VHiSN74HC14NS	4- 230	AE		B	
VHiSTA401A/-1	4- 225	AP		B	
//	4- 231	AP		B	
VHiSTR2124/-1	6- 15	AR		B	
VHiTC7S86F/-1	4- 232	AD	N	B	
//	4- 233	AD	N	B	
VHiTD62308F-1	4- 217	AH		B	
//	4- 229	AH		B	
VHiTD62503F-1	4- 214	AF		B	
VHi27040RAB1A	4- 220	BK	N	B	
VHSDRA2TE//-1	4- 399	AG		B	
VRD-HT2EY472J	1- 112	AA		C	
VRD-RB2HY394J	7- 5	AA		C	
VRD-RB2HY561J	4- 255	AA		C	
VRD-RC2EY000J	4- 234	AA		C	
//	4- 235	AA		C	
//	4- 406	AA		C	
VRD-RC2EY103G	6- 16	AA		C	
VRD-RC2EY105J	5- 26	AA		C	
VRD-RC2EY202J	5- 27	AA		C	
VRD-RC2EY221J	5- 28	AA		C	
VRD-RC2EY273G	5- 29	AA		C	
VRD-RC2EY330J	5- 30	AA		C	
VRD-RC2EY392G	4- 258	AA		C	
VRD-RC2EY392J	4- 256	AA		C	
VRD-RC2EY4R7J	5- 31	AA		C	
VRD-RC2EY472J	5- 32	AA		C	
VRD-RC2EY473J	5- 33	AA		C	
VRS-RE3AAR68J	4- 257	AA		C	
VRS-TS2AD100J	4- 333	AA		C	
VRS-TS2AD101J	4- 262	AA		C	
//	4- 263	AA		C	
//	4- 291	AA		C	
//	4- 307	AA		C	
//	4- 309	AA		C	
//	4- 322	AA		C	
//	4- 323	AA		C	
//	4- 324	AA		C	
//	4- 325	AA		C	
//	4- 326	AA		C	
//	4- 327	AA		C	
//	4- 328	AA		C	
//	4- 329	AA		C	
VRS-TS2AD102G	4- 318	AA		C	
VRS-TS2AD102J	4- 265	AA		C	
//	4- 302	AA		C	
//	4- 311	AA		C	
//	4- 312	AA		C	
//	4- 334	AA		C	
//	4- 346	AA		C	
//	4- 347	AA		C	
//	4- 349	AA		C	
//	4- 351	AA		C	
//	4- 357	AA		C	
//	4- 358	AA		C	
//	4- 359	AA		C	
//	4- 360	AA		C	
//	4- 361	AA		C	
//	4- 370	AA		C	
//	4- 382	AA		C	
//	4- 383	AA		C	
VRS-TS2AD103F	4- 365	AA		C	
VRS-TS2AD103J	4- 259	AA		C	
//	4- 260	AA		C	
//	4- 261	AA		C	
//	4- 264	AA		C	
//	4- 268	AA		C	
//	4- 277	AA		C	
//	4- 278	AA		C	
//	4- 279	AA		C	
//	4- 280	AA		C	
//	4- 281	AA		C	
//	4- 282	AA		C	
//	4- 283	AA		C	

PARTS CODE	NO.	PRICE RANK	NEW MARK	PART RANK	
VRS-TS2AD103J	4- 284	AA		C	
//	4- 285	AA		C	
//	4- 286	AA		C	
//	4- 287	AA		C	
//	4- 288	AA		C	
//	4- 289	AA		C	
//	4- 293	AA		C	
//	4- 296	AA		C	
//	4- 297	AA		C	
//	4- 299	AA		C	
//	4- 300	AA		C	
//	4- 313	AA		C	
//	4- 314	AA		C	
//	4- 315	AA		C	
//	4- 316	AA		C	
//	4- 319	AA		C	
//	4- 320	AA		C	
//	4- 321	AA		C	
//	4- 330	AA		C	
//	4- 331	AA		C	
//	4- 332	AA		C	
//	4- 335	AA		C	
//	4- 336	AA		C	
//	4- 338	AA		C	
//	4- 340	AA		C	
//	4- 348	AA		C	
//	4- 350	AA		C	
//	4- 353	AA		C	
//	4- 356	AA		C	
//	4- 366	AA		C	
//	4- 367	AA		C	
//	4- 368	AA		C	
//	4- 372	AA		C	
//	4- 373	AA		C	
//	4- 374	AA		C	
//	4- 375	AA		C	
//	4- 376	AA		C	
//	4- 377	AA		C	
//	4- 378	AA		C	
//	4- 385	AA		C	
//	4- 386	AA		C	
//	4- 387	AA		C	
VRS-TS2AD104J	4- 294	AA		C	
//	4- 295	AA		C	
//	4- 301	AA		C	
VRS-TS2AD122F	4- 342	AA		C	
//	4- 364	AA		C	
VRS-TS2AD134F	4- 269	AA		C	
VRS-TS2AD182G	4- 317	AA		C	
VRS-TS2AD2R2J	4- 236	AA		C	
//	4- 237	AA		C	
//	4- 238	AA		C	
//	4- 239	AA		C	
//	4- 240	AA		C	
//	4- 241	AA		C	
//	4- 242	AA		C	
VRS-TS2AD202J	4- 271	AA		C	
VRS-TS2AD203J	4- 390	AA		C	
VRS-TS2AD220J	4- 290	AA		C	
VRS-TS2AD221J	4- 392	AA		C	
VRS-TS2AD223J	4- 270	AA		C	
VRS-TS2AD272J	4- 276	AA		C	
//	4- 303	AA		C	
VRS-TS2AD273J	4- 298	AA		C	
//	4- 306	AA		C	
VRS-TS2AD330J	4- 391	AA		C	
VRS-TS2AD332J	4- 273	AA		C	
VRS-TS2AD333J	4- 275	AA		C	
//	4- 389	AA		C	
VRS-TS2AD362F	4- 341	AA		C	
VRS-TS2AD391J	4- 267	AA		C	
VRS-TS2AD472G	4- 343	AA		C	
VRS-TS2AD472J	4- 274	AA		C	
//	4- 352	AA		C	
//	4- 354	AA		C	
//	4- 355	AA		C	
//	4- 362	AA		C	
//	4- 371	AA		C	
//	4- 381	AA		C	
//	4- 384	AA		C	

PARTS CODE	NO.	PRICE RANK	NEW MARK	PART RANK	
VRS-TS2AD472J	4- 388	AA		C	
VRS-TS2AD473J	4- 369	AA		C	
VRS-TS2AD562J	4- 266	AA		C	
//	4- 308	AA		C	
//	4- 310	AA		C	
VRS-TS2AD563J	4- 304	AA		C	
//	4- 305	AA		C	
VRS-TS2AD622J	4- 379	AA		C	
//	4- 380	AA		C	
VRS-TS2AD623J	4- 272	AA		C	
VRS-TS2AD682J	4- 292	AA		C	
VRS-TS2AD912G	4- 344	AA		C	
//	4- 345	AA		C	
VS2SA1036KQRC	4- 250	AB		B	
//	4- 254	AB		B	
VS2SC2412K/-1	4- 251	AB		B	
//	4- 253	AB		B	
VS2SC4153-/-1	4- 248	AG		B	
//	4- 249	AG		B	
VS2SD1898//-1	4- 252	AD		B	
VVKCC1040G/-1	5- 34	BL		B	
VVKFiP7B13/-1	8- 4	AX		B	
【X】					
XBBSC30P06000	1- 8	AA		C	
XBBSC30P20000	2- 32	AA		C	
XBPBZ40P06K00	2- 19	AA		C	
XBPSD26P04K00	1- 26	AA		C	
XBPSD30P06KS0	2- 44	AA		C	
XBPSD30P14KS0	6- 17	AA		C	
XBSSD30P08000	4- 417	AA		C	
XCPSD30P12X00	2- 6	AA		C	
XEBSD30P06000	1- 21	AA		C	
//	2- 35	AA		C	
XEBSD30P08000	1- 35	AA		C	
//	2- 12	AA		C	
XHBSD30P08000	1- 19	AA		C	
XNESD30-24000	2- 27	AA		C	
//	4- 418	AA		C	
//	6- 18	AA		C	
XUBSD30P10000	2- 46	AC		C	
XUBSD40P08000	2- 1	AA		C	
XUPSD23P08000	1- 27	AA		C	
XUPSD30P16000	2- 51	AA		C	
【0】					
0ALW-P5107-51	1- 104	AC		C	
0ALW-P5109-51	1- 105	AC		C	
0ALW-P9002-01	1- 101	AC		B	
0ALW-P9003-01	1- 102	AC		C	
0ALW-P9003-50	1- 103	AC		C	
0ALZD2006-670	1- 43	AA		C	
0ALZV12CK104E	1- 110	AD		C	
0ALZW8AA473DJ	1- 109	AA		C	
0ALZY03600874	1- 107	AH		B	
0ALZZ05200138	1- 106	AQ		B	
0AL101KFG-001	1- 40	AV		C	
0AL421KFG-001	1- 41	BB		C	
0AL9090E1002R	1- 42	BK		E	

PARTS CODE	NO.	PRICE RANK	NEW MARK	PART RANK	

CAUTION:
The socket-outlet shall be installed near the equipment and shall be easily accessible.

VORSICHT:
Die Netzsteckdose muß nahe dem Gerât angebracht und leicht zugänglich sein.

ATTENTION:
La prise de-courant murale devra être installée à proximité de l'equipement et devra être facilement accessible.

AVISO:
El tomacorriente debe estar instalado cerca del equipo y debe quedar bien accesible.

VARNING:
Det matande vägguttaget skall placeras nära apparaten och vara lätt åtkomligh.

SHARP

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